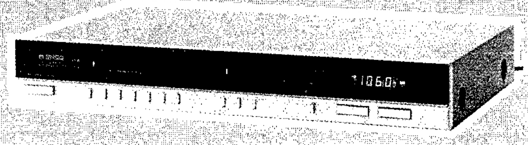
Service Manual

MODEL TT2900/TA2900/TI2900/TFL2900

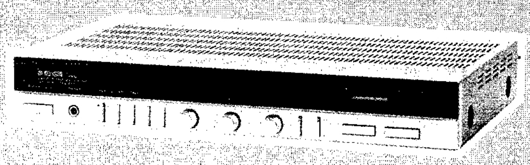
TUNER/AMPLIFIER/TRANSMITTER/TAPE DECK

TENSAI
INTERNATIONAL

STEREO TUNER TT2900

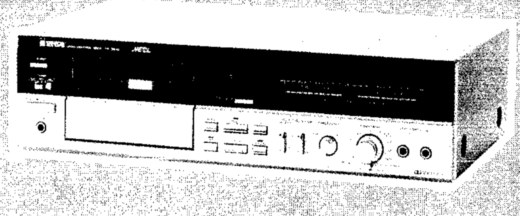


STEREO INTEGRATED AMPLIFIER TA2900



REMOTE CONTROL TRANSMITTER TI2900

STEREO CASSETTE TAPE DECK TFL2900



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MODEL TT2900

1. SPECIFICATIONS

FM Performance

Frequency Range	87.5 – 108 MHz
Sensitivity	1.2 μV
S/N	68 dB
Auto Scanning Sensitivity	25 μV
Selectivity	65 dB
Muting Level in Auto Scanning	25 μV
Frequency Response	18 – 17,000 Hz

AM Performance

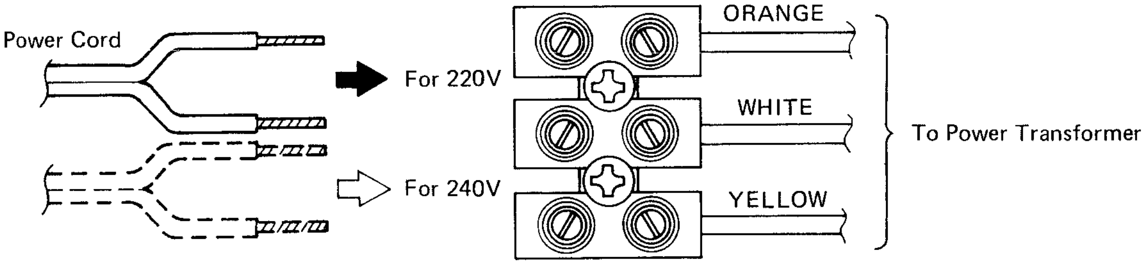
Frequency Range	
LW	146 – 353 kHz
MW	522 – 1,611 kHz
Sensitivity for 20 dB S/N	
LW	100 μV
MW	50 μV
Auto Scanning Sensitivity	200 μV

General

Power Source	∿ 220/240V, 50 Hz
Dimensions	430(W) x 60(H) x 254(D) mm
Weitht	3.4 kg
Accessories	FM Wire Antenna Phono Lead AM Wire Antenna

Specifications are subject to change without notice.

NOTE: According to the power supply voltage, connect the power cord as shown in below.



2. DISASSEMBLY INSTRUCTIONS

(1) **Top cover removal**
Remove four screws on both sides of the set and lift up the top cover.

(2) **Bottom cover removal**
Remove seven screws (A) from bottom as shown in Figure 1 and lift up the bottom cover.

(3) **Front panel removal**
Remove six screws (B) from top and bottom as shown in Figure 1 and 2, and the front panel can be removed with push buttons.

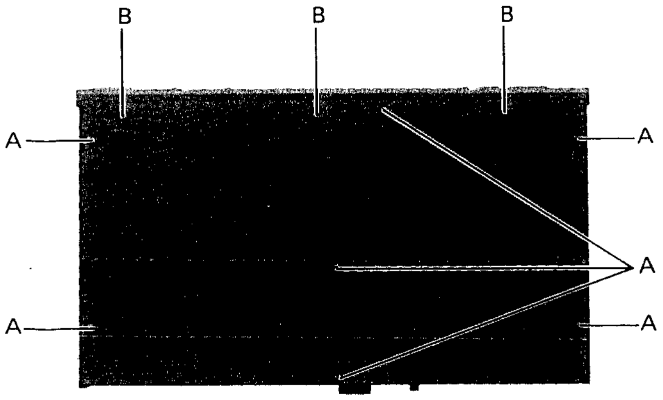


Figure 1

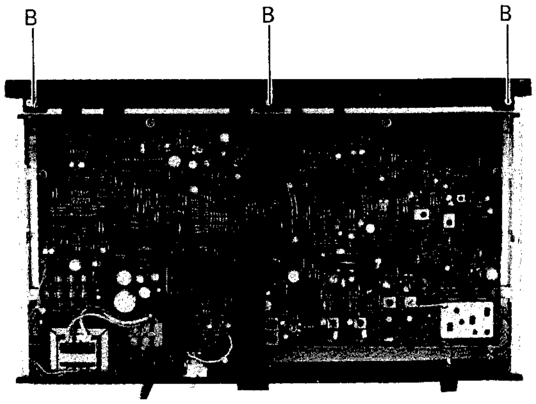


Figure 2

MODEL TT2900

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S/N	68 dB
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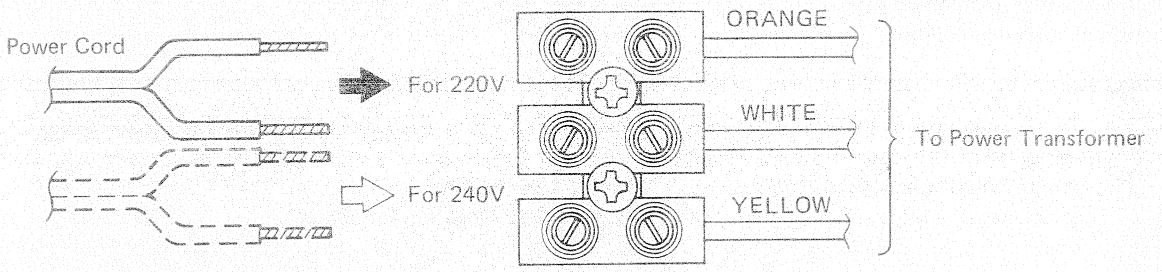

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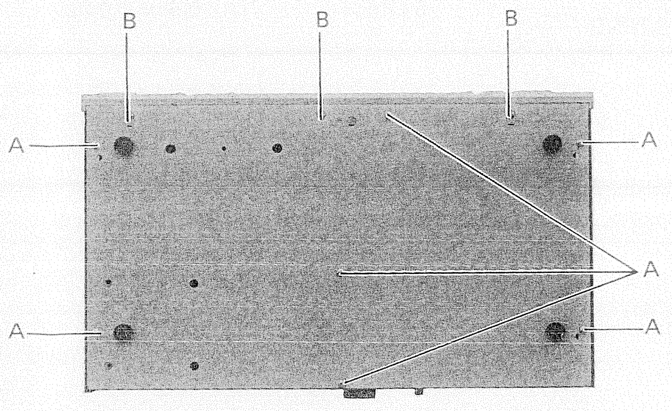

Figure 1

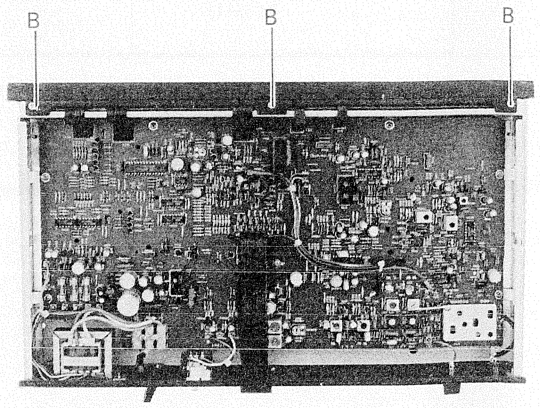

Figure 2

3. ALIGNMENT INSTRUCTIONS

Test Equipments for AM

(1) Sweep signal generator (Sweep range of at least 10 kHz, center frequency of 450 kHz).
(2) Signal generator with frequency range of at least from 140 kHz to 2 MHz.
(3) Oscilloscope with wide range amplifier of approx. 100 kHz.
(4) IEC dummy antenna. (Figure 3)
(5) DC and AC Volt meter with high impedance. (DCVM, ACVM)

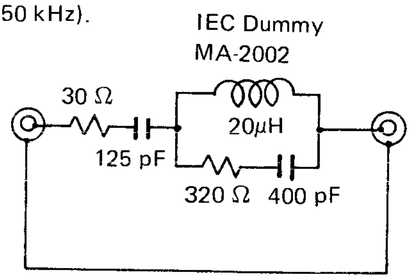

Figure 3

Test Equipments for FM

(1) Signal generator with frequency range of at least from 87 MHz to 109 MHz.
(2) FM stereo modulator.
(3) Frequency counter with frequency range of at least 30 kHz.
(4) Center meter.
(5) 75 ohm matching pad.
(6) DCVM and ACVM.

NOTE:

(1) During alignment keep the output level of signal generator to lowest where usable output can be maintained from the set.
(2) Modulation of signal generator . . . . 400 Hz 30% for AM.
otherwise noted. 1 kHz 75 kHz deviation for FM.

VCO Voltage Alignment

(1) Set Function to FM.
(2) For alignment point, see Figure 7.

TABLE 1 VCO VOLTAGE ALIGNMENT CHART (See Figure 4)

Step	Radio Dial Setting	Meter or connection for Adjustment	Adjusting Point	Remarks
1	98 MHz	DC Voltmeter TP12 ∿ TP13 (GND)	SVR601	0.65V ± 0.02V

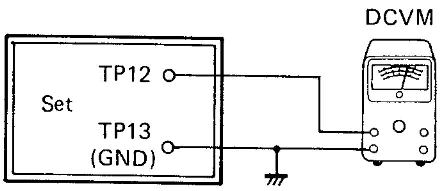

Figure 4

AM Alignments

IF Alignment

(1) Set Function to MW.
(2) For alignment point, see Figure 7.
(3) Proceed as outlined in the TABLE 2 IF ALIGNMENT CHART.

TABLE 2 IF ALIGNMENT CHART (See Figure 5)

Step	Signal Generator Connection	Signal Generator Frequency	Radio Dial Setting	Oscilloscope Connection for Adjustment	Adjusting Point	Adjustment
1	Sweep Generator through buffer to AM ANT.	————	522 kHz	Scope to TP7 ∿ TP8 (GND) as shown in Figure 5.	IT202, 203	Align "IF curve" in Figure 6.

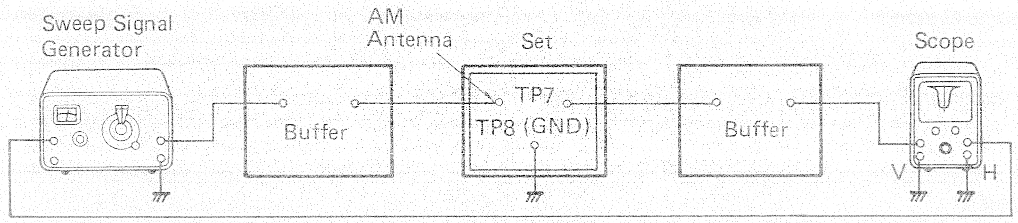
Sweep Signal Generator
AM Antenna
Set
Buffer
TP7
TP8 (GND)
Buffer
Scope
V
H

Figure 5

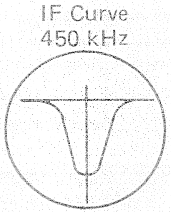
IF Curve
450 kHz

Figure 6

Alignment Points

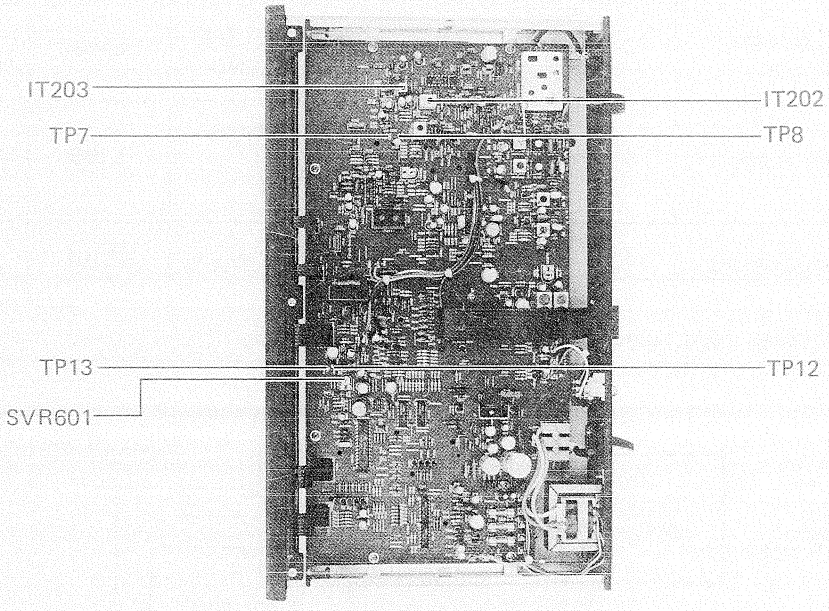
IT203
TP7
TP13
SVR601
IT202
TP8
TP12

Figure 7

AM Alignments

IF Alignment

(1) Set Function to MW.
(2) For alignment point, see Figure 7.
(3) Proceed as outlined in the TABLE 2 IF ALIGNMENT CHART.

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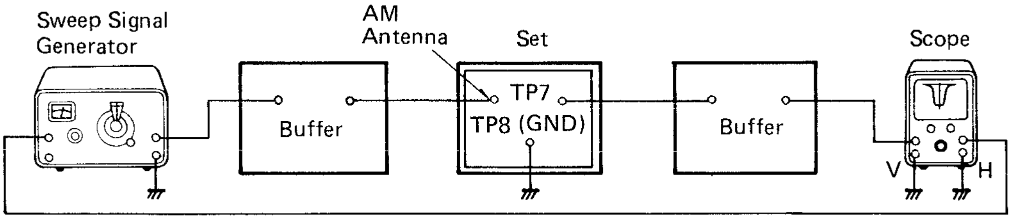

Sweep Signal Generator
AM Antenna
Set
Scope
Buffer
TP7
TP8 (GND)
Buffer
V
H

Figure 5

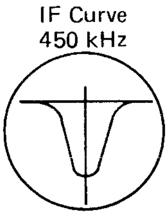

IF Curve
450 kHz

Figure 6

Alignment Points

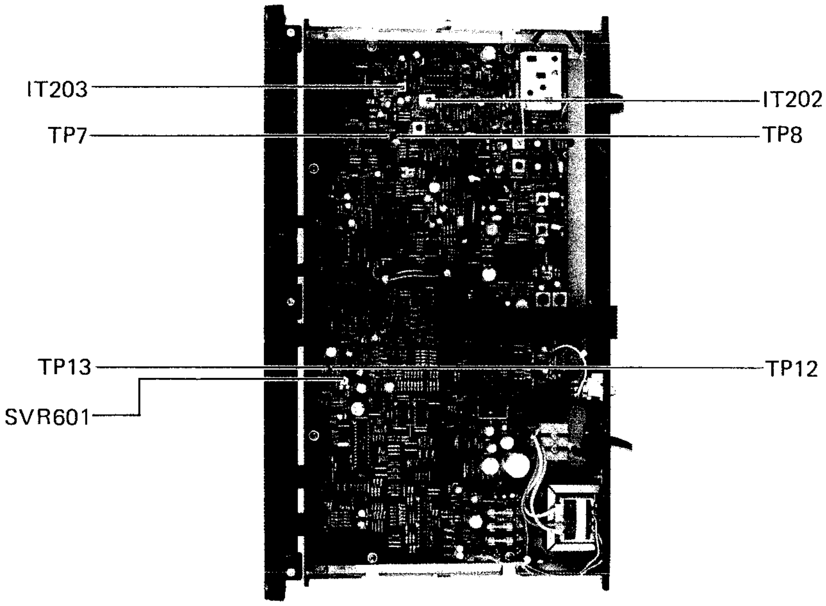

IT203
TP7
TP13
SVR601
IT202
TP8
TP12

Figure 7

LW Alignment

(1) Set Function to LW.
(2) For alignment point, see Figure 10.
(3) Proceed as outlined in the TABLE 3 LW ALIGNMENT CHART.

TABLE 3 LW ALIGNMENT CHART (See Figure 8)

Step	Signal Generator Connection	Signal Generator Frequency	Radio Dial Setting	Meter Connection for Adjustment	Adjusting Point	Adjustment
1	IEC Dummy Antenna	———	353 kHz	DC VM to TP5 ∿ TP6 (GND)	L109	9.0V ± 0.1V
2	Same at step 1	173 kHz	Tune to signal (173 kHz)	ACVM across OUTPUT terminal	L107	Adjust for maximum.
3	Same as step 1	317 kHz	Tune to signal (317 kHz)	Same as step 4	TC102	Same as step 2
4	Repeat steps 2 and 3 until no further improvement is noticed.					

MW Alignment

(1) Set Function to MW.
(2) For alignment point, see Figure 10.
(3) Proceed as outlined in the TABLE 4 MW ALIGNMENT CHART.

TABLE 4 MW ALIGNMENT CHART (See Figure 8)

Step	Signal Generator Connection	Signal Generator Frequency	Radio Dial Setting	Meter Connection for Adjustment	Adjusting Point	Adjustment
1	IEC Dummy Antenna	———	1611 kHz	DCVM to TP5 ∿ TP6 (GND)	L108	10.0V ± 0.1V
2	Same as step 1	603 kHz	Tune to signal (603 kHz)	ACVM across OUTPUT terminal	L106	Adjust for maximum.
3	Same as step 1	1404 kHz	Tune to signal (1404 kHz)	Same as step 4	TC101	Same as step 2
4	Repeat steps 2 and 3 until no further improvement is noticed.					

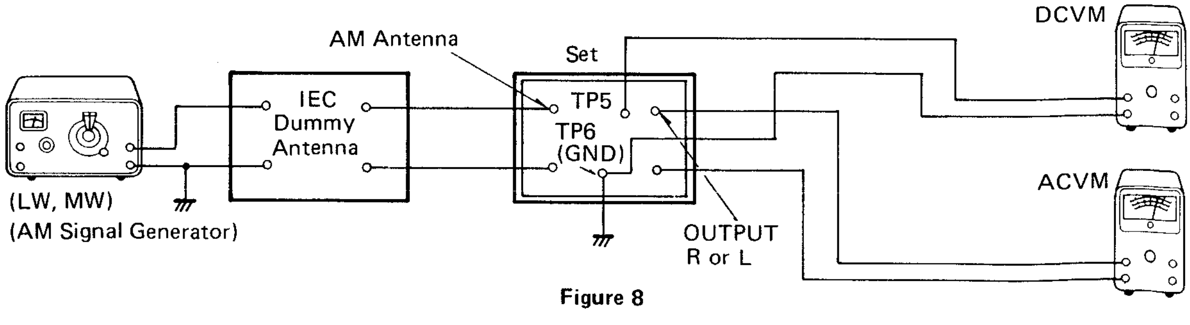


Figure 8

AM Auto Stop Alignment

(1) Set Select Button to MW.
(2) For alignment point, see Figure 10.
(3) Proceed as outlined in the TABLE 5 AM AUTO STOP ALIGNMENT CHART.

TABLE 5 AM AUTO STOP ALIGNMENT CHART (See Figure 9)

Step	Signal Generator Connection	Signal Generator Frequency & Output	Radio Dial Setting	Meter or Connection for Adjustment	Adjusting Point	Remarks
1	IEC Dummy Antenna	999 kHz	Tune to signal (999 kHz)	DC Voltmeter TP11 ∿ TP10 (GND)	IT204	11V ± 0.5V

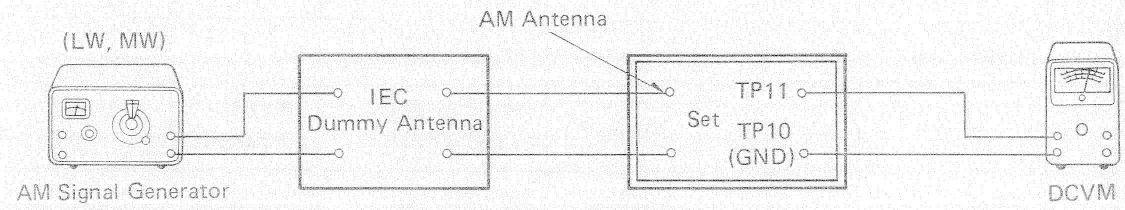

(LW, MW)
AM Antenna
IEC
Dummy Antenna
Set
TP11
TP10
(GND)
AM Signal Generator
DCVM

Figure 9

Alignment Points

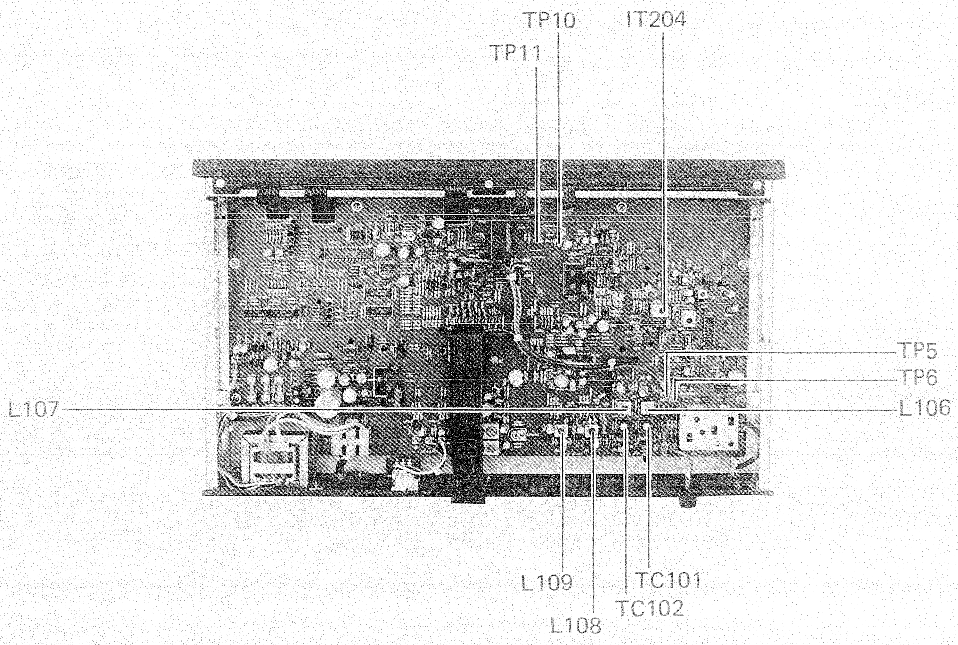

TP10
IT204
TP11
TP5
TP6
L107
L106
L109
TC101
TC102
L108

Figure 10

AM Auto Stop Alignment

(1) Set Select Button to MW.
(2) For alignment point, see Figure 10.
(3) Proceed as outlined in the TABLE 5 AM AUTO STOP ALIGNMENT CHART.

TABLE 5 AM AUTO STOP ALIGNMENT CHART (See Figure 9)

Step	Signal Generator Connection	Signal Generator Frequency & Output	Radio Dial Setting	Meter or Connection for Adjustment	Adjusting Point	Remarks
1	IEC Dummy Antenna	999 kHz	Tune to signal (999 kHz)	DC Voltmeter TP11 ∿ TP10 (GND)	IT204	11V ± 0.5V

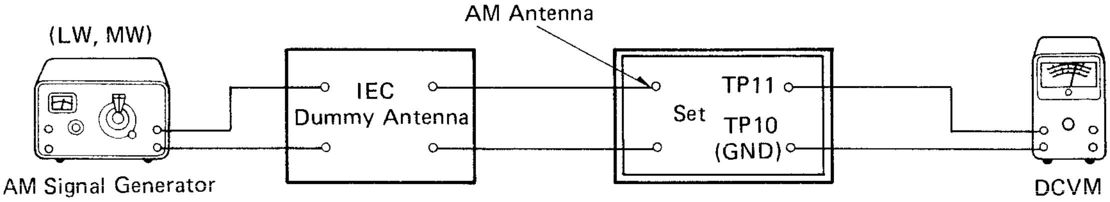

(LW, MW)
AM Antenna
IEC
Dummy Antenna
Set
TP11
TP10
(GND)
AM Signal Generator
DCVM

Figure 9

Alignment Points

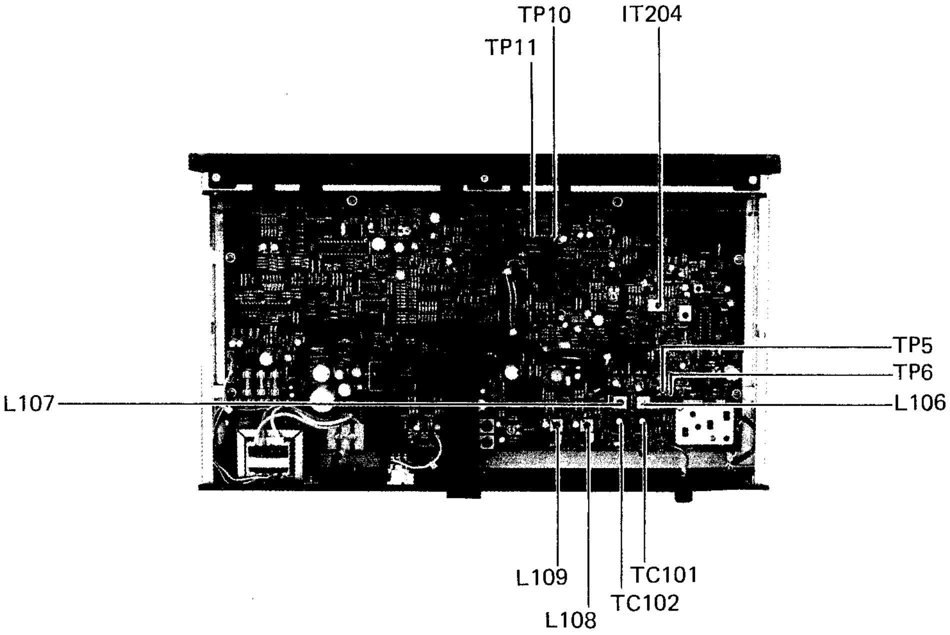

TP10
IT204
TP11
TP5
TP6
L107
L106
L109
TC101
TC102
L108

Figure 10

FM Alignments

(1) Set Function to FM
(2) Set the AUTO/MANUAL switch to MANUAL (⎍).
(3) For alignment point, see Figure 14.
(4) Proceed as outlined in the TABLE 6 FM ALIGNMENT CHART.

TABLE 6 FM ALIGNMENT CHART (See Figure 11)

Step	Signal Generator Connection	Signal Generator Frequency	Radio Dial Setting	Meter or Connection for Adjustment	Adjusting Point	Remarks
1	———	———	———	Center meter across TP1 and TP2	IT201 (Pri)	Adjust to center
2	75 ohm matching pad	98 MHz (1mV)	Tune to signal	Distortion meter to OUTPUT	IT201 (Sec)	Minimum distortion
3	Repeat steps 1 and 2 until no further improvement is noticed.					
4	———	———	108 MHz	DCVM to TP5 ∿ TP6 (GND)	T1 on Block FM	8.0V ±0.1V
5	75 ohm matching pad	90 MHz	Tune to signal	ACVM across output terminal	L1, L3 on Block FM	Adjust for maximum
6	Same as step 5	106 MHz	Tune to signal	Same as step 5	TC1 on Block FM	Same as step 5
7	Repeat steps 5 and 6 until no further improvement is noticed.					

CAUTION

* The lowest frequency range must not be bellow 87.5 MHz in order to comply with FTZ regulations in West Germany.

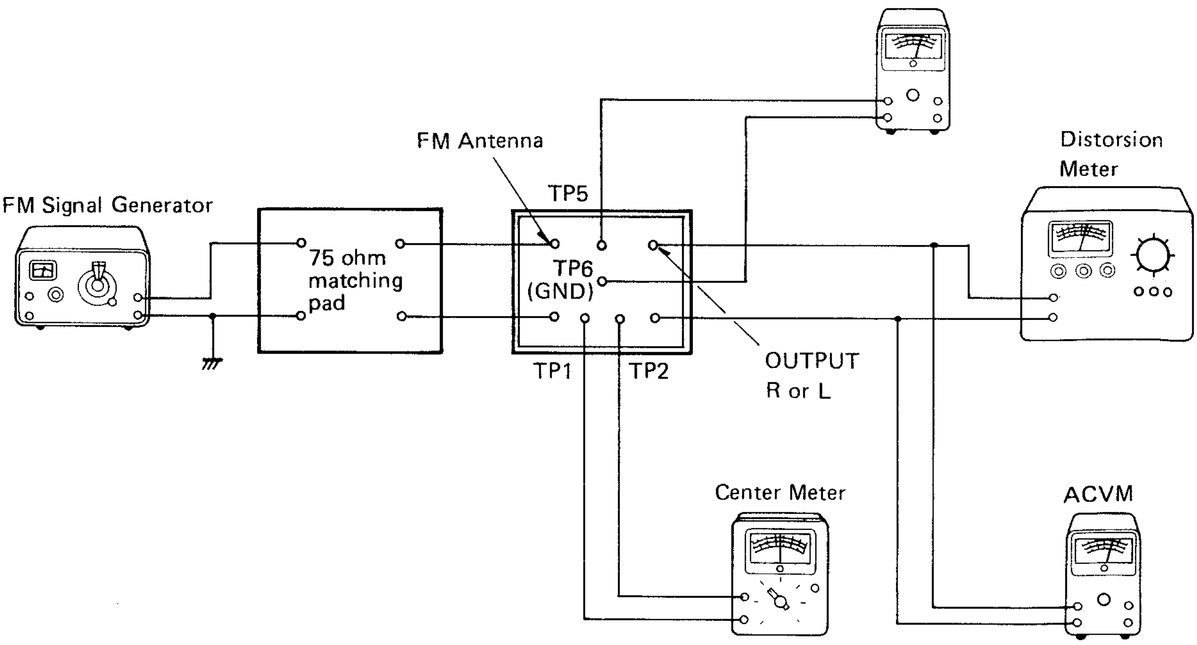

DCVM
FM Antenna
Distorsion Meter
FM Signal Generator
TP5
75 ohm matching pad
TP6 (GND)
TP1
TP2
OUTPUT R or L
Center Meter
ACVM

Figure 11

FM Stereo Alignment

NOTE:

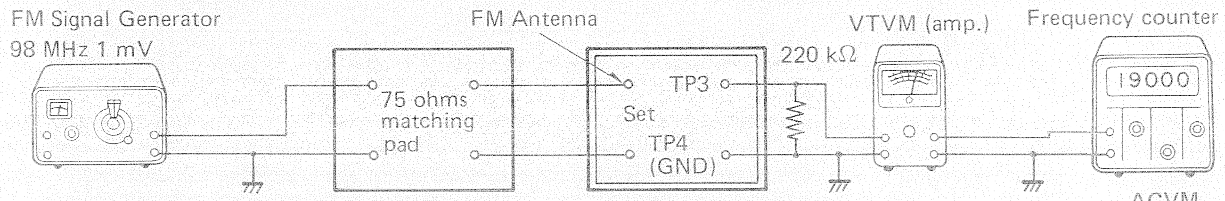
(1) Set the deviation meter by the signal of L – R and switch mode desired.

Alignment

(1) Connect the equipments as shown in Figure 12 or Figure 13.
(2) RF signal input should be about 60 dB (1mV).
(3) Set the turning to a quiet point.
(4) Proceed as outlined in the TABLE 7 FM STEREO ALIGNMENT CHART.
(5) For alignment point see Figure 14.

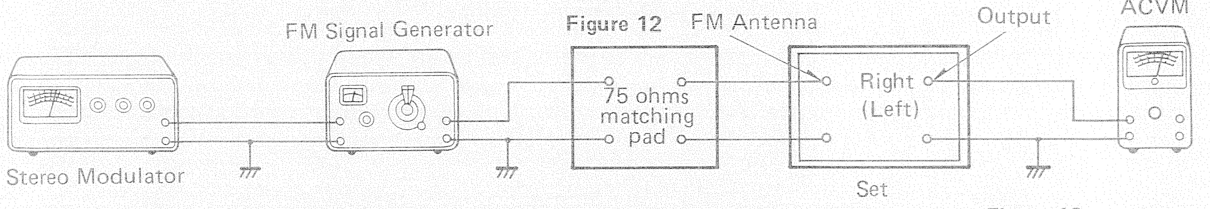
TABLE 7 FM STEREO ALIGNMENT CHART (See Figures 12 & 13)

Step	Modulation Frequency	Modulation Mode Setting	Modulation Level Setting	Connection	Adjusting Points	Adjusting Level etc.
1	———	———	0%	Figure 12	SVR202 slightly	19.0 ± 0.019 kHz
2	1000 Hz	Stereo Rch (Lch) with pilot	90% (Main & Sub) (67.5 kHz dev.) 10% (Pilot) (7.5 kHz dev.)	Figure 13	SVR203 (slightly separation)	Adjust for minimum Lch (Rch).
3	1000 Hz	Stereo with pilot	Same as step 2	Figure 13	SVR201	Adjust to light up stereo indicator with 25 μV signal input level.



FM Signal Generator
98 MHz 1 mV
75 ohms matching pad
FM Antenna
TP3
Set
TP4 (GND)
220 kΩ
VTVM (amp.)
Frequency counter
19000

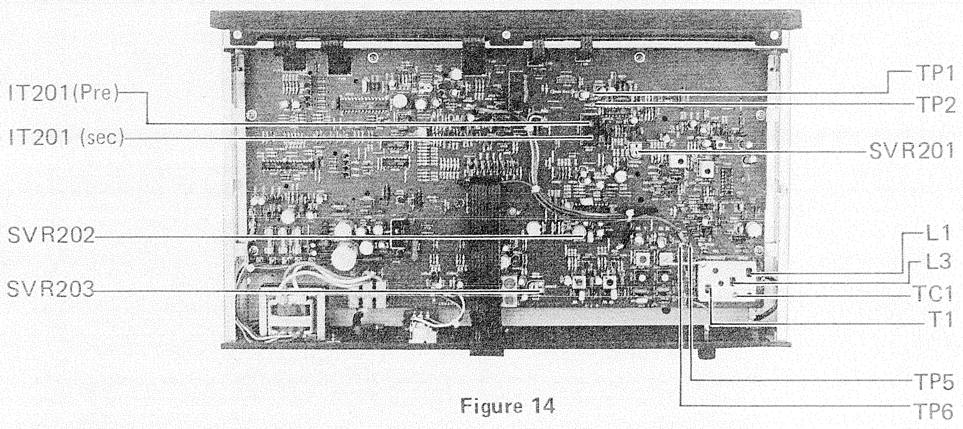
Figure 12



Stereo Modulator
FM Signal Generator
75 ohms matching pad
FM Antenna
Right (Left)
Set
Output
ACVM

Figure 13

Alignment Points

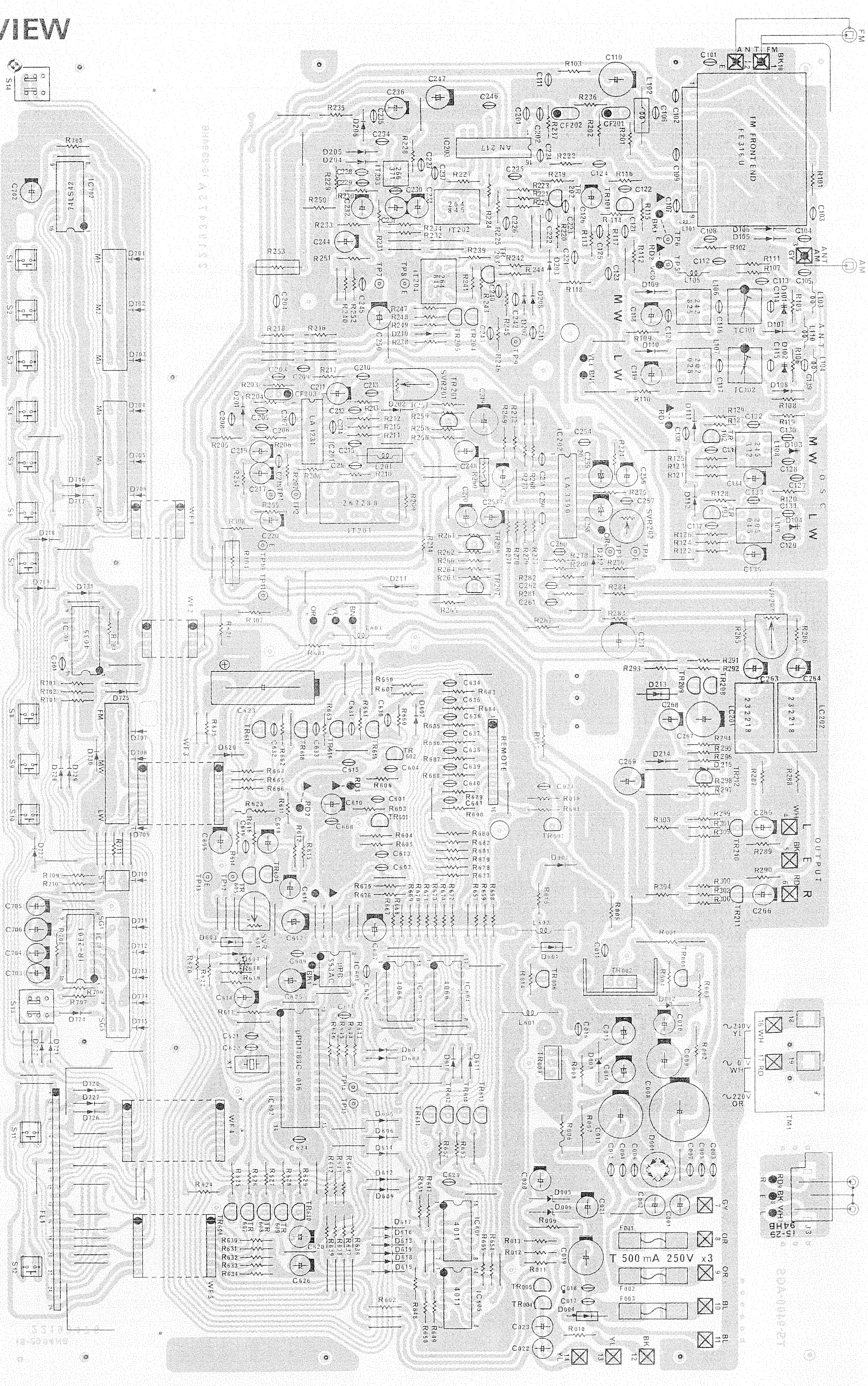


IT201(Pre)
IT201 (sec)
SVR202
SVR203
TP1
TP2
SVR201
L1
L3
TC1
T1
TP5
TP6

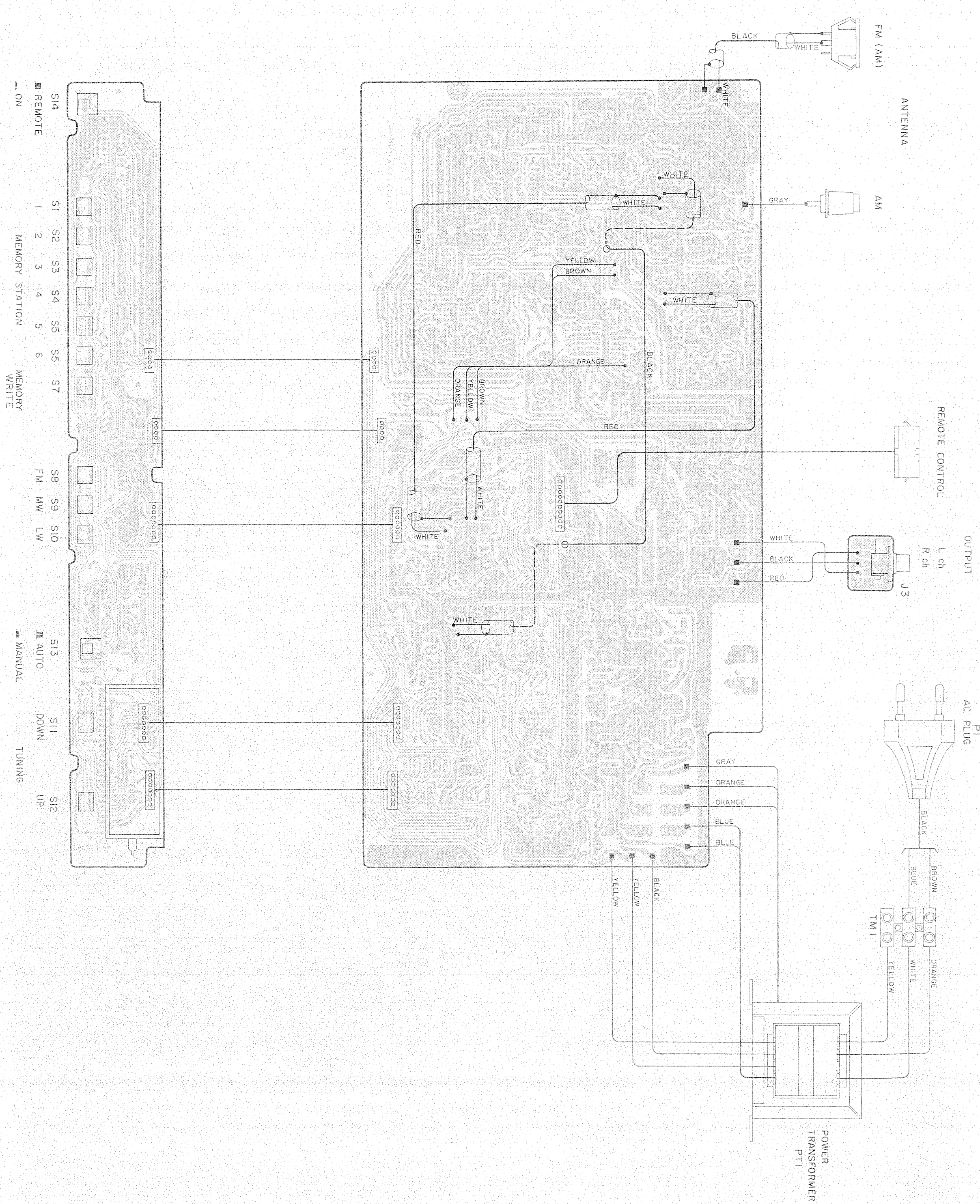
Figure 14

4. PRINTED CIRCUIT BOARDS

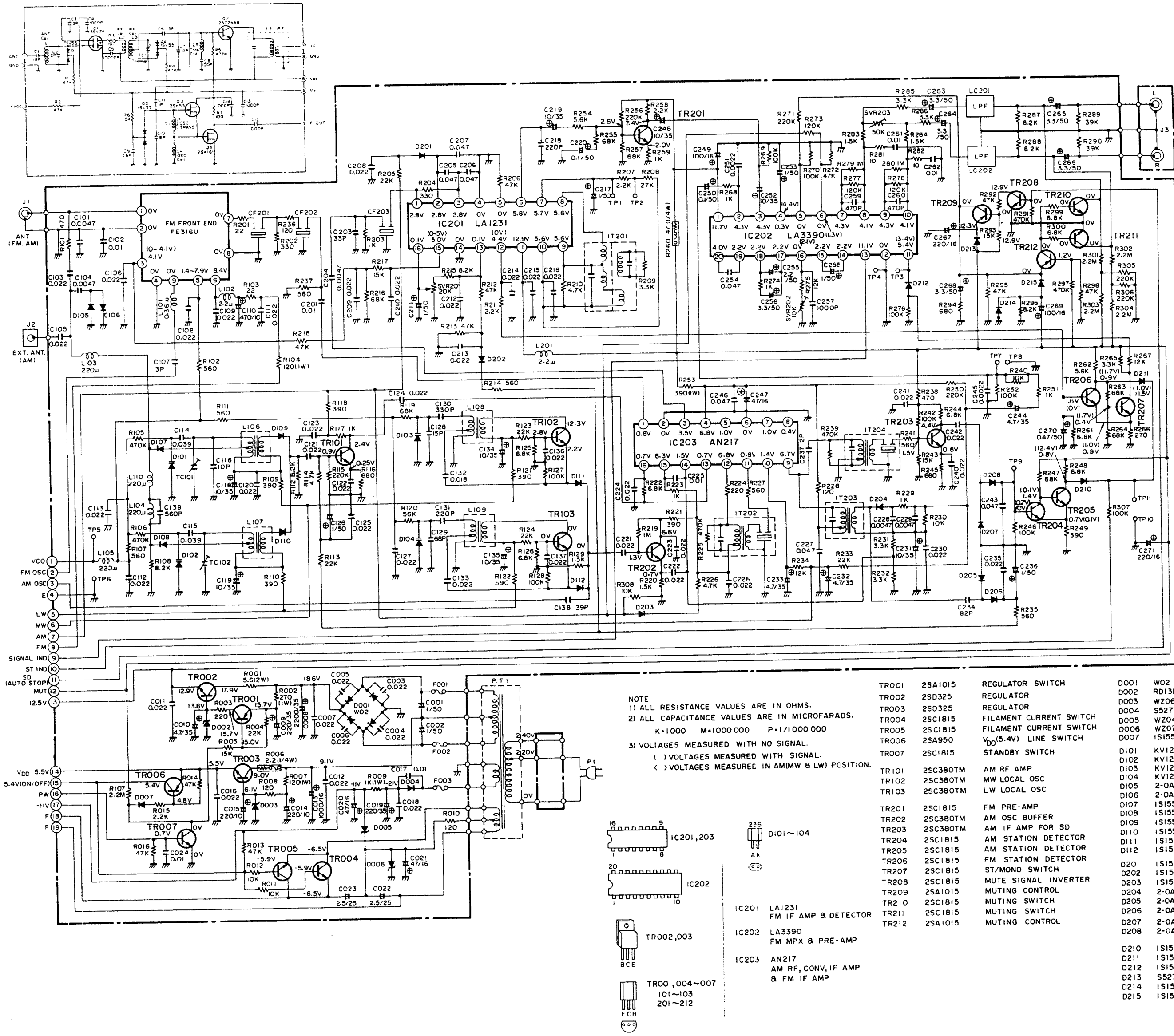
TOP VIEW


FM
AM
ANT FM
ANT AM
FM FRONT END FE316U
AN 217
LA 1231
LA 3350
74LS42
uPD1703C-016
uPB 553AC
4066
4011
IR-2E01
REMOTE
MW
LW
FM
MW OSC
LW OSC
ANT
OUTPUT
L
R
T 500 mA 250V x3
~240V YL
~0V WH
~220V OR
TM1
FL1
WF1
WF2
WF3
WF4
WF5
2SA-0049-01

5. WIRING DIAGRAM


S14
■ REMOTE
▬ ON
S1 S2 S3 S4 S5 S5 S7
1 2 3 4 5 6
MEMORY STATION
MEMORY WRITE
S8 S9 S10
FM MW LW
S13
■ AUTO
▬ MANUAL
S11 S12
DOWN UP
TUNING
ANTENNA
FM (AM)
AM
BLACK
WHITE
GRAY
YELLOW
BROWN
ORANGE
RED
REMOTE CONTROL
OUTPUT
L ch
R ch
J3
P1
AC PLUG
BLUE
BLUE
TM1
POWER TRANSFORMER
PT1

6. SCHEMATIC DIAGRAM

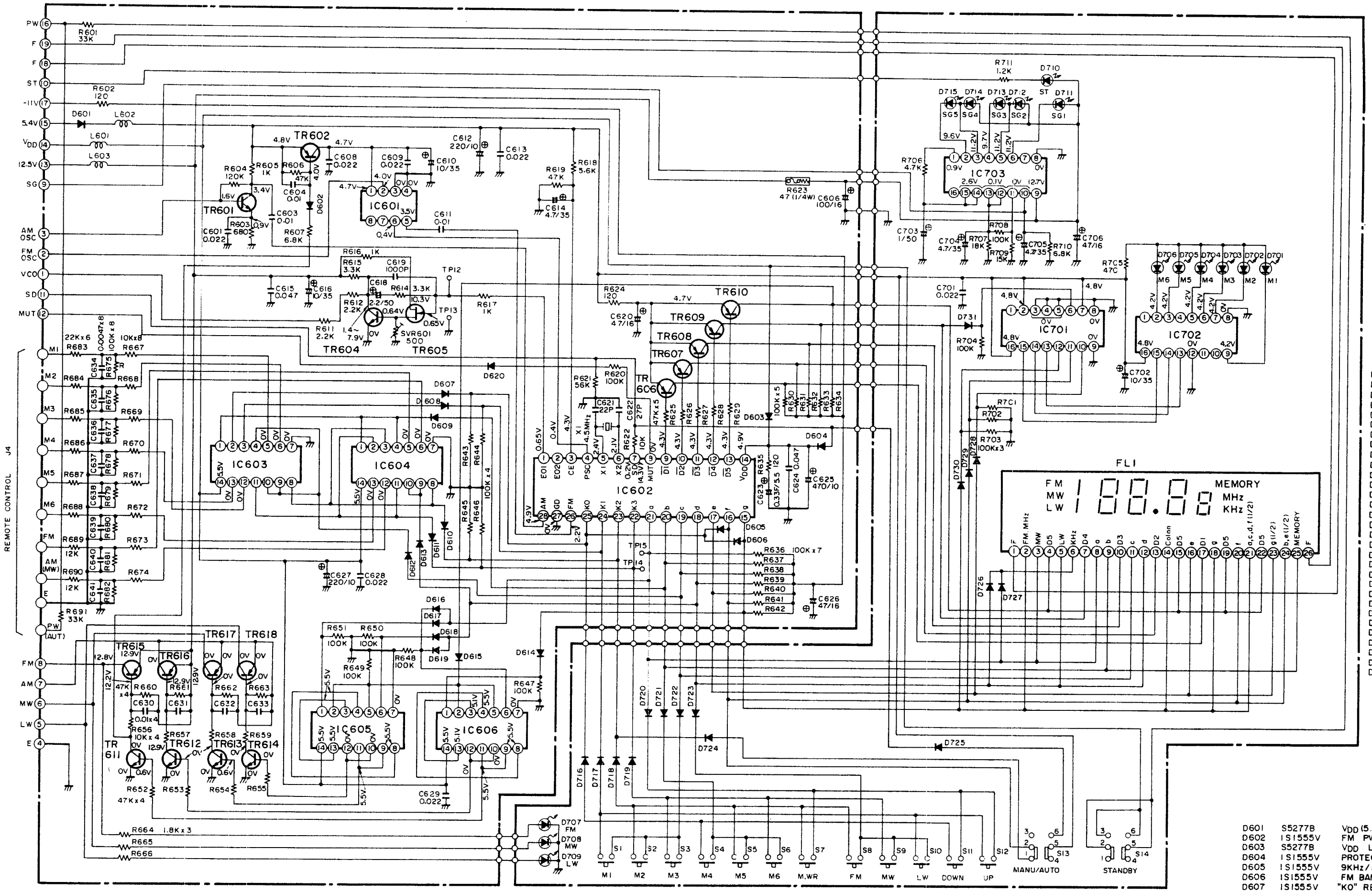

FM FRONT END FE316U
IC201 LA1231
IC202 LA3390
IC203 AN217
IT201
IT202
IT203
IT204
LPF
LC201
LC202
J1 ANT (FM. AM)
J2 EXT. ANT. (AM)
J3
P.T.1
P1
VCO
FM OSC
AM OSC
E
LW
MW
AM
FM
SIGNAL IND
ST IND
SD (AUTO STOP)
MUT
12.5V
VDD 5.5V
5.4V(ON/OFF)
PW
-11V
F
F
TR001
TR002
TR003
TR004
TR005
TR006
TR007
TR101
TR102
TR103
TR201
TR202
TR203
TR204
TR205
TR206
TR207
TR208
TR209
TR210
TR211
TR212
D001 W02
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11
16
9
1
8
IC201,203
20
11
1
10
IC202
236
D101~104
AK
BCE
TR002,003
ECB
TR001,004~007
101~103
201~212

NOTE
1) ALL RESISTANCE VALUES ARE IN OHMS.
2) ALL CAPACITANCE VALUES ARE IN MICROFARADS.
K=1000 M=1000 000 P=1/1000 000
3) VOLTAGES MEASURED WITH NO SIGNAL.
( ) VOLTAGES MEASURED WITH SIGNAL.
〈 〉 VOLTAGES MEASUREC IN AM(MW & LW) POSITION.

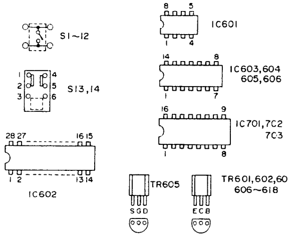
IC201	LA1231	FM IF AMP & DETECTOR
IC202	LA3390	FM MPX & PRE-AMP
IC203	AN217	AM RF, CONV, IF AMP & FM IF AMP

TR001	2SA1015	REGULATOR SWITCH
TR002	2SD325	REGULATOR
TR003	2SD325	REGULATOR
TR004	2SC1815	FILAMENT CURRENT SWITCH
TR005	2SC1815	FILAMENT CURRENT SWITCH
TR006	2SA950	V_{DD}(5.4V) LINE SWITCH
TR007	2SC1815	STANDBY SWITCH
TR101	2SC380TM	AM RF AMP
TR102	2SC380TM	MW LOCAL OSC
TR103	2SC380TM	LW LOCAL OSC
TR201	2SC1815	FM PRE-AMP
TR202	2SC380TM	AM OSC BUFFER
TR203	2SC380TM	AM IF AMP FOR SD
TR204	2SC1815	AM STATION DETECTOR
TR205	2SC1815	AM STATION DETECTOR
TR206	2SC1815	FM STATION DETECTOR
TR207	2SC1815	ST/MONO SWITCH
TR208	2SC1815	MUTE SIGNAL INVERTER
TR209	2SA1015	MUTING CONTROL
TR210	2SC1815	MUTING SWITCH
TR211	2SC1815	MUTING SWITCH
TR212	2SA1015	MUTING CONTROL

D001	W02	RECTIFIER
D002	RD13E-B3	REGULATOR
D003	WZ061	REGULATOR
D004	S5277B	RECTIFIER
D005	WZ042	REG FOR CUT-OFF BIAS
D006	WZ071	REGULATOR
D007	1S1555V	VDD (5.4V) LINE SWITCH
D101	KV1236	MW ANT V.C
D102	KV1236	LW ANT V.C
D103	KV1236	MW OSC V.C
D104	KV1236	LW OSC V.C
D105	2-0A90S	AM RF LIMITTER
D106	2-0A90S	AM RF LIMITTER
D107	1S1555V	MW ANT SWITCH
D108	1S1555V	LM ANT SWITCH
D109	1S1555V	MW RF INPUT SWITCH
D110	1S1555V	LW RF INPUT SWITCH
D111	1S1555V	MW OSC OUTPUT SWITCH
D112	1S1555V	LW OSC OUTPUT SWITCH
D201	1S1555V	FM IF KILLER SWITCH
D202	1S1555V	FM SIGNAL IND. SWITCH
D203	1S1555V	AM CONVERTER SWITCH
D204	2-0A90S	AM DETECTOR
D205	2-0A90S	AM SIGNAL IND. DETECTOR
D206	2-0A90S	AM SIGNAL IND. DETECTOR
D207	2-0A90S	AM STATION DETECTOR
D208	2-0A90S	AM STATION DETECTOR
D210	1S1555V	AM SD SWITCH
D211	1S1555V	FM SD SWITCH
D212	1S1555V	ST/MONO SWITCH
D213	S5277B	MUT SUPPLY SWITCH
D214	1S1555V	MUT SUPPLY SWITCH
D215	1S1555V	MUT SUPPLY SWITCH


REMOTE CONTROL J4
PW 16
F 19
F 18
ST 10
-11V 17
5.4V 15
VDD 14
12.5V 13
SG 9
AM OSC 3
FM OSC 2
VCO 1
SD 11
MUT 12
M1
M2
M3
M4
M5
M6
FM
AM (MW)
E
PW (AUT)
FM 8
AM 7
MW 6
LW 5
E 4
IC601
IC602
IC603
IC604
IC605
IC606
IC701
IC702
IC703
TR601
TR602
TR604
TR605
TR606
TR607
TR608
TR609
TR610
TR611
TR612
TR613
TR614
TR615
TR616
TR617
TR618
FL1
FM
MW
LW
MEMORY
MHz
KHz
D707 FM
D708 MW
D709 LW
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
M1
M2
M3
M4
M5
M6
M.WR
FM
MW
LW
DOWN
UP
MANU/AUTO
STANDBY

NOTE
1) STANDBY SWITCH "S14" IS SHOWN IN "OFF" POSITION.
2) MANUAL/AUTO SWITCH "S13" IS SHOWN IN "AUTO" POSITION.
3) ALL RESISTANCE VALUES ARE IN OHMS.
4) ALL CAPACITANCE VALUES ARE IN MICROFARADS.
K=1 000 M=1 000 000 P=1/1 000 000 F=1 000 000
5) VOLTAGES MEASURED IN FM POSITION.


S1~12
S13,14
IC601
IC603,604 605,606
IC701,7C2 7C3
IC602
TR605
SGD
TR601,602,604 606~618
ECB

IC601	μPB553AC	FM PRESCALER
IC602	μPD1703C-016	PLL & SYSTEM CONTROLLER
IC603	μPD4066B	SWITCH FOR REMOTE CONTROL
IC604	μPD4066B	SWITCH FOR REMOTE CONTROL
IC605	μPD4011B	MW/LW CODE LATCH
IC606	μPD4011B	FM/AM CODE LATCH
IC701	μPD4035B	MEMORY IND CODE LATCH
IC702	HD74LS42	MEMORY IND DECODER
IC703	IR2E01	SIGNAL IND DRIVER
TR601	2SC380TM	AM OSC BUFFER
TR602	2SA1015	FM PW SUPPLY SWITCH
TR604	2SC1815	LOW PASS FILTER FOR VCO
TR605	2SK246	LOW PASS FILTER FOR VCO

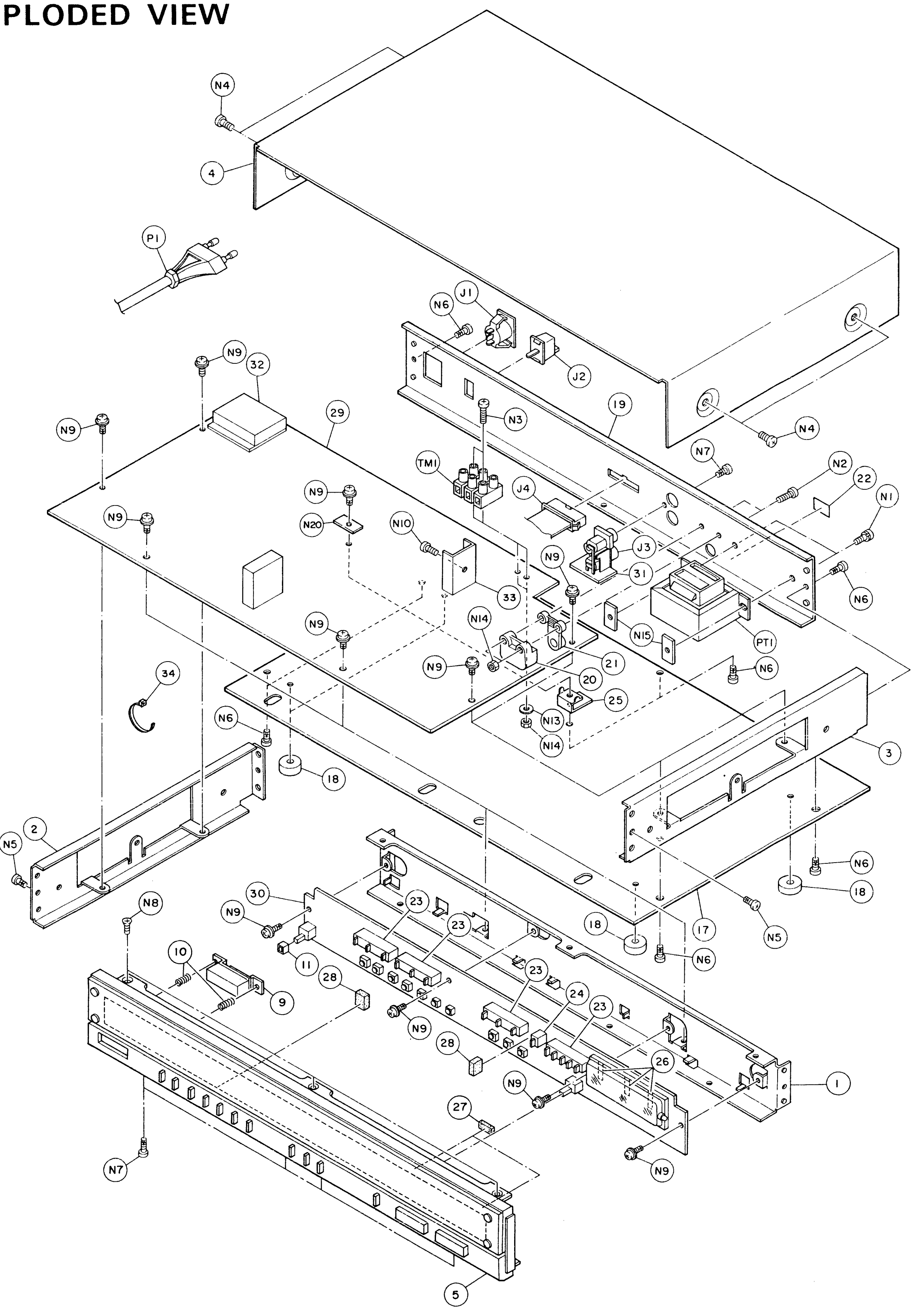
TR606	2SA1015	"$\overline{D1}$" DIGIT INVERTER
TR607	2SA1015	"$\overline{D2}$" DIGIT INVERTER
TR608	2SA1015	"$\overline{D3}$" DIGIT INVERTER
TR609	2SA1015	"$\overline{D4}$" DIGIT INVERTER
TR610	2SA1015	"$\overline{D5}$" DIGIT INVERTER
TR611	2SC1815	FM PW SUPPLY SWITCH
TR612	2SC1815	AM PW SUPPLY SWITCH
TR613	2SC1815	MW PW SUPPLY SWITCH
TR614	2SC1815	LW PW SUPPLY SWITCH
TR615	2SA1015	FM PW SUPPLY SWITCH
TR616	2SA1015	AM PW SUPPLY SWITCH
TR617	2SA1015	MW PW SUPPLY SWITCH
TR618	2SA1015	LW PW SUPPLY SWITCH

D601	S5277B	VDD (5.4V) LINE SWITCH
D602	1S1555V	FM PW SPPLY SWITCH
D603	S5277B	VDD LINE SWITCH FOR BACK-UP
D604	1S1555V	PROTECTOR FOR SD
D605	1S1555V	9KHz/10KHz SELECT SWITCH
D606	1S1555V	FM BAND SELECT SWITCH
D607	1S1555V	"K0" RETURN SIG SWITCH
D608	1S1555V	"K1" RETURN SIG SWITCH
D609	1S1555V	"Sb" SEGMENT SWITCH
D610	1S1555V	"K2" RETURN SIG SWITCH
D611	1S1555V	"K3" RETURN SIG SWITCH
D612	1S1555V	"Sc" SEGMENT SWITCH
D613	1S1555V	"Sd" SEGMENT SWITCH
D614	1S1555V	"Sg" SEGMENT SWITCH
D615	1S1555V	CLOCK SIG SWITCH FOR LATCH
D616	1S1555V	"Sa" SEGMENT SWITCH
D617	1S1555V	"Sa" SEGMENT SWITCH
D618	1S1555V	"Sd" SEGMENT SWITCH
D619	1S1555V	"Sd" SEGMENT SWITCH
D620	1S1555V	PROTECTOR FOR MUT

D701	LN224RP	MEMORY-1 INDICATOR
D702	LN224RP	MEMORY-2 INDICATOR
D703	LN224RP	MEMORY-3 INDICATOR
D704	LN224RP	MEMORY-4 INDICATOR
D705	LN224RP	MEMORY-5 INDICATOR
D706	LN224RP	MEMORY-6 INDICATOR
D707	LN224RP	FM INDICATOR
D708	LN224RP	MW INDICATOR
D709	LN224RP	LW INDICATOR
D710	LN224RP	ST INDICATOR
D711 D712 D713 D714 D715	LN324GP	SIGNAL INDICATOR
D716	1S1555V	"K0" KEY RETURN SWITCH
D717	1S1555V	"K1" KEY RETURN SWITCH
D718	1S1555V	"K2" KEY RETURN SWITCH
D719	1S1555V	"K3" KEY RETURN SWITCH
D720	1S1555V	"Sa" SEGMENT SWITCH
D721	1S1555V	"Sb" SEGMENT SWITCH
D722	1S1555V	"Sc" SEGMENT SWITCH
D723	1S1555V	"Sd" SEGMENT SWITCH
D724	1S1555V	AUTO/MANUAL SWITCH
D725	1S1555V	AUTO/MANUAL SWITCH
D726	1S1555V	"KHz" DISPLAY SWITCH
D727	1S1555V	"KHz" DISPLAY SWITCH
D728	1S1555V	"Se" SEGMENT SWITCH
D729	1S1555V	"Sf" SEGMENT SWITCH
D730	1S1555V	"Sg" SEGMENT SWITCH
D731	1S1555V	CLOCK SIG SWITCH FOR LATCH

7. EXPLODED VIEW AND PARTS LISTS

EXPLODED VIEW


N4
4
P1
N6
J1
J2
N9
32
29
N9
N3
19
N4
TM1
N7
N2
22
N1
N9
J4
N20
N10
J3
N9
31
N6
33
N14
N15
PT1
N9
21
20
N6
34
N9
25
N13
N14
N6
3
18
2
N5
N6
18
30
23
18
17
N5
N8
N9
23
N6
10
11
23
28
9
24
23
N9
28
26
N9
1
27
N9
N7
5

PARTS LIST

ELECTRICAL PARTS

Symbol No.	Part No.	Description
ICs		
IC201	22114700	IC, LA1231
IC202	22114993	IC, LA3390
IC203	22114359	IC, AN217-BB
IC601	22114996	IC, µPB553AC
IC602	22114995	IC, µPD1703C-016
IC603	22114997	IC, µPD4066BC
IC604	22114997	IC, µPD4066BC
IC605	22114998	IC, µPD4011BC
IC606	22114998	IC, µPD4011BC
IC701	22114999	IC, µPD4035BC
IC702	22114871	IC, HD74LS42
IC703	22114994	IC, IR2E01
TRANSISTORS & DIODES Symbol No. with TR: Transistor Symbol No. with D: Diode		
TR001	36534060	2SA1015-GR
TR002	22114478	2SD325-E
TR003	22114478	2SD325-E
TR004	36317480	2SC1815-BL
TR005	36317480	2SC1815-BL
TR006	36532940	2SA950-Y
TR007	36317480	2SC1815-BL
TR101	36707940	2SC380TM-O
TR102	36707940	2SC380TM-O
TR103	36707940	2SC380TM-O
TR201	36317480	2SC1815-BL
TR202	36707940	2SC380TM-O
TR203	36707940	2SC380TM-O
TR204	36317480	2SC1815-BL
TR205	36317480	2SC1815-BL
TR206	36317480	2SC1815-BL
TR207	36317480	2SC1815-BL
TR208	36317480	2SC1815-BL
TR209	36534060	2SA1015-GR
TR210	36317480	2SC1815-BL
TR211	36317480	2SC1815-BL
TR212	36534060	2SA1015-GR
TR601	36707940	2SC380TM-O
TR602	36534060	2SA1015-GR
TR603	36738120	2SC784TM-O
TR604	36317480	2SC1815-BL
TR605	36044620	2SK246-Y
TR606	36534060	2SA1015-GR
TR607	36534060	2SA1015-GR
TR608	36534060	2SA1015-GR
TR609	36534060	2SA1015-GR
TR610	36534060	2SA1015-GR
TR611	36317480	2SC1815-BL
TR612	36317480	2SC1815-BL
TR613	36317480	2SC1815-BL
TR614	36317480	2SC1815-BL
TR615	36534060	2SA1015-GR
TR616	36534060	2SA1015-GR
TR617	36534060	2SA1015-GR
TR618	36534060	2SA1015-GR
D001	22115251	W02
D002	22115574	RD13E-B3-M
D003	22115246	WZ061
D004	37978380	S5277B
D005	22115726	WZ042
D006	22115225	WZ071
D007	37246745	1S1555V-TP3
D101, 103	22115641	KV1236-X
D102, 104	22115641	KV1236-X
D015	22115715	20A90S
D106	22115715	20A90S
D107	37246745	1S1555V-TP3
D108	37246745	1S1555V-TP3
D109	37246745	1S1555V-TP3
D110	37246745	1S1555V-TP3
D111	37246745	1S1555V-TP3
D112	37246745	1S1555V-TP3
D201	37246745	1S1555V-TP3
D202	37246745	1S1555V-TP3
D203	37246745	1S1555V-TP3
D204	22115715	20A90S
D205	22115715	20A90S
D206	22115715	20A90S
D207	22115715	20A90S
D208	22115715	20A90S
D210	37246745	1S1555V-TP3
D211	37246745	1S1555V-TP3
D212	37246745	1S1555V-TP3
D213	37978380	S5277B
D214	37246745	1S1555V-TP3
D215	37246745	1S1555V-TP3
D601	37978380	S5277B
D602	37246745	1S1555V-TP3

Symbol No.	Part No.	Description
D603	37978380	S5277B
D604 ∿ 619	37246745	1S1555V-TP3
D701 ∿ 710	22115723	LN224RP
D711	22115725	LN324GP
D712	22115725	LN324GP
D713	22115725	LN324GP
D714	22115725	LN324GP
D715	22115725	LN324GP
D716 ∿ 731	37246745	1S1555V-TP3

COILS & TRANSFORMERS

Symbol No.	Part No.	Description
L102	22211229	Choke Coil, AF
L103	22291122	Choke Coil
L104	22291122	Choke Coil
L105	22291122	Choke Coil
L106	22242825	Antenna Coil, MW
L107	22202028	Antenna Coil, LW
L108	22245332	OSC Coil, MW
L109	22205045	OSC Coil, LW
L110	22291122	Choke Coil
L201	22211229	Choke Coil, AF
L601	22211229	Choke Coil, AF
L602	22211229	Choke Coil, AF
L603	22211229	Choke Coil, AF
LC201	22232218	MPX Coil
LC202	22232218	MPX Coil
IT201	22267288	IF Transformer, FM
IT202	22264845	IF Transformer, AM
IT203	22266371	IF Transformer, AM
IT204	22264845	IF Transformer, AM

CAPACITORS

Tolerance: D: ±0.5PF, J: ±5%, K: ±10%, M: ±20%
P: + 100 to –0%, Z: + 80 to –20%, G: ±2%
(N): Non polarity type

Symbol No.	Part No.	Description
C001	22403077	Electrolytic 1 mfd/50WV(N)
C002	22403077	Electrolytic 1 mfd/50WV(N)
C003	22342223	Ceramic 0.022 mfd, Z
C004	22342223	Ceramic 0.022 mfd, Z
C005	22342223	Ceramic 0.022 mfd, Z
C006	22342223	Ceramic 0.022 mfd, Z
C007	22342223	Ceramic 0.022 mfd, Z
C008	22447222	Electrolytic 2200 mfd/35WV
C009	22447221	Electrolytic 220 mfd/35WV
C010	22447479	Electrolytic 4.7 mfd/35WV
C011	22342223	Ceramic 0.022 mfd, Z
C012	22342223	Ceramic 0.022 mfd, Z
C013	22445102	Electrolytic 1000 mfd/16WV
C014	22443221	Electrolytic 220 mfd/10WV
C015	22443221	Electrolytic 220 mfd/10WV
C016	22342223	Ceramic 0.022 mfd, Z
C017	22342103	Ceramic 0.01 mfd, Z
C018	22342223	Ceramic 0.022 mfd, Z
C019	22447221	Electrolytic 220 mfd/35WV
C020	22445470	Electrolytic 47 mfd/16WV
C021	22445470	Electrolytic 47 mfd/16WV
C022	22403078	Electrolytic 2.5 mfd/25WV(N)
C023	22403078	Electrolytic 2.5 mfd/25WV(N)
C024	22342103	Ceramic 0.01 mfd, Z
C102	22342103	Ceramic 0.01 mfd, Z
C103	22342223	Ceramic 0.022 mfd, Z
C104	22343472	Ceramic 0.0047 mfd, M
C105	22342223	Ceramic 0.022 mfd, Z
C106	22342223	Ceramic 0.022 mfd, Z
C107	22361409	Ceramic 4 PF, D
C108	22342223	Ceramic 0.022 mfd, Z
C109	22342223	Ceramic 0.022 mfd, Z
C110	22443471	Electrolytic 470 mfd/10WV
C111	22342223	Ceramic 0.022 mfd, Z
C112	22342223	Ceramic 0.022 mfd, Z
C113	22342223	Ceramic 0.022 mfd, Z
C114	22371393	Mylar 0.039 mfd, J
C115	22371393	Mylar 0.039 mfd, J
C116	22361100	Ceramic 10 PF, D
C118	22447100	Electrolytic 10 mfd/35WV
C119	22447100	Electrolytic 10 mfd/35WV
C120	22342223	Ceramic 0.022 mfd, Z
C121	22342223	Ceramic 0.022 mfd, Z
C122	22342223	Ceramic 0.022 mfd, Z
C123	22342223	Ceramic 0.022 mfd, Z
C124	22342223	Ceramic 0.022 mfd, Z
C125	22342223	Ceramic 0.022 mfd, Z
C126	22448109	Electrolytic 1 mfd/50WV
C127	22342223	Ceramic 0.022 mfd, Z
C128	22361150	Ceramic 15 PF, J
C129	22361680	Ceramic 68 PF, J
C130	22391331	Polypropylene 330 PF/50WV, J
C131	22391221	Polypropylene 220 PF/50WV, J

Symbol No.	Part No.	Description
C132	22371183	Mylar 0.018 mfd, J
C133	22371223	Mylar 0.022 mfd, J
C134	22447100	Electrolytic 10 mfd/35WV
C135	22447100	Electrolytic 10 mfd/35WV
C136	22342223	Ceramic 0.022 mfd, Z
C137	22342223	Ceramic 0.022 mfd, Z
C138	22361390	Ceramic 39 PF, J
C139	22391561	Polypropylene 560 PF/50WV, J
C201	22342103	Ceramic 0.01 mfd, Z
C202	22361470	Ceramic 47 PF, J
C203	22361330	Ceramic 33 PF, J
C204	22343472	Ceramic 0.0047 mfd, M
C205	22342473	Ceramic 0.047 mfd, Z
C206	22342473	Ceramic 0.047 mfd, Z
C207	22342473	Ceramic 0.047 mfd, Z
C208	22342223	Ceramic 0.022 mfd, Z
C209	22342223	Ceramic 0.022 mfd, Z
C210	22342223	Ceramic 0.022 mfd, Z
C211	22448109	Electrolytic 1 mfd/50WV
C212	22342223	Ceramic 0.022 mfd, Z
C213	22342223	Ceramic 0.022 mfd, Z
C214	22342223	Ceramic 0.022 mfd, Z
C215	22342223	Ceramic 0.022 mfd, Z
C216	22342223	Ceramic 0.022 mfd, Z
C217	22448109	Electrolytic 1 mfd/50WV
C218	22361221	Ceramic 220 PF, J
C219	22447100	Electrolytic 10 mfd/35WV
C220	22448108	Electrolytic 0.1 mfd/50WV
C221	22342223	Ceramic 0.022 mfd, Z
C222	22342223	Ceramic 0.022 mfd, Z
C223	22342223	Ceramic 0.022 mfd, Z
C224	22342223	Ceramic 0.022 mfd, Z
C225	22342103	Ceramic 0.01 mfd, Z
C226	22342223	Ceramic 0.022 mfd, Z
C227	22342473	Ceramic 0.047 mfd, Z
C228	22343472	Ceramic 0.0047 mfd, M
C229	22343472	Ceramic 0.0047 mfd, M
C230	22342223	Ceramic 0.022 mfd, Z
C231	22447100	Electrolytic 10 mfd/35WV
C232	22447479	Electrolytic 4.7 mfd/35WV
C233	22447479	Electrolytic 4.7 mfd/35WV
C234	22361820	Ceramic 82 PF, J
C235	22342223	Ceramic 0.022 mfd, Z
C236	22448109	Electrolytic 1 mfd/50WV
C237	22361209	Ceramic 2 PF, D
C240	22342223	Ceramic 0.022 mfd, Z
C241	22342223	Ceramic 0.022 mfd, Z
C242	22342223	Ceramic 0.022 mfd, Z
C243	22342473	Ceramic 0.047 mfd, Z
C244	22447479	Electrolytic 4.7 mfd/35WV

Symbol No.	Part No.	Description
C245	22343222	Ceramic 0.0022 mfd, M
C246	22342473	Ceramic 0.047 mfd, Z
C247	22445470	Electrolytic 47 mfd/16WV
C248	22447100	Electrolytic 10 mfd/35WV
C249	22445101	Electrolytic 100 mfd/16WV
C250	22448108	Electrolytic 0.1 mfd/50WV
C251	22343222	Ceramic 0.0022 mfd, M
C252	22447100	Electrolytic 10 mfd/35WV
C253	22448109	Electrolytic 1 mfd/50WV
C254	22371473	Mylar 0.047 mfd, J
C255	22440315	Electrolytic 2.2 mfd/50WV
C256	22440323	Electrolytic 3.3 mfd/50WV
C257	22391102	Polypropylene 1000 PF/50WV, J
C258	22440314	Electrolytic 1 mfd/50WV
C259	22391471	Polypropylene 470 PF/50WV, J
C260	22391471	Polypropylene 470 PF/50WV, J
C261	22371103	Mylar 0.01 mfd, J
C262	22371103	Mylar 0.01 mfd, J
C263	22448339	Electrolytic 3.3 mfd/50WV
C264	22448339	Electrolytic 3.3 mfd/50WV
C265	22448339	Electrolytic 3.3 mfd/50WV
C266	22448339	Electrolytic 3.3 mfd/50WV
C267	22445221	Electrolytic 220 mfd/16WV
C268	22448339	Electrolytic 3.3 mfd/50WV
C269	22445101	Electrolytic 100 mfd/16WV
C270	22448478	Electrolytic 0.47 mfd/50WV
C271	22445221	Electrolytic 220 mfd/16WV
C601	22342223	Ceramic 0.022 mfd, Z
C603	22342103	Ceramic 0.01 mfd, Z
C604	22342103	Ceramic 0.01 mfd, Z
C605	22342103	Ceramic 0.01 mfd, Z
C606	22445470	Electrolytic 47 mfd/16WV
C607	22343472	Ceramic 0.0047 mfd, M
C608	22342223	Ceramic 0.022 mfd, Z
C609	22342223	Ceramic 0.022 mfd, Z
C610	22447100	Electrolytic 10 mfd/35WV
C611	22342103	Ceramic 0.01 mfd, Z
C612	22443221	Electrolytic 220 mfd/10WV
C613	22342223	Ceramic 0.022 mfd, Z
C614	22447479	Electrolytic 4.7 mfd/35WV
C615	22342473	Ceramic 0.047 mfd, Z
C616	22447100	Electrolytic 10 mfd/35WV
C617	22342223	Ceramic 0.022 mfd, Z
C618	22440315	Electrolytic 2.2 mfd/50WV
C619	22343102	Ceramic 0.001 mfd, M
C620	22445470	Electrolytic 47 mfd/16WV
C621	22361220	Ceramic 22 PF, J
C622	22361270	Ceramic 27 PF, J
C623	22440472	Electrolytic 0.33 mfd/5.5W

Symbol No.	Part No.	Description
C624	22342473	Ceramic 0.047 mfd, Z
C625	22443221	Electrolytic 220 mfd/10WV
C626	22445470	Electrolytic 47 mfd/16WV
C627	22443221	Electrolytic 220 mfd/10WV
C628	22342223	Ceramic 0.022 mfd, Z
C629	22342223	Ceramic 0.022 mfd, Z
C630	22342103	Ceramic 0.01 mfd, Z
C631	22342103	Ceramic 0.01 mfd, Z
C632	22342103	Ceramic 0.01 mfd, Z
C633	22342103	Ceramic 0.01 mfd, Z
C634	22343472	Ceramic 0.0047 mfd, M
C635	22343472	Ceramic 0.0047 mfd, M
C636	22343472	Ceramic 0.0047 mfd, M
C637	22343472	Ceramic 0.0047 mfd, M
C638	22343472	Ceramic 0.0047 mfd, M
C639	22343472	Ceramic 0.0047 mfd, M
C640	22343472	Ceramic 0.0047 mfd, M
C641	22343472	Ceramic 0.0047 mfd, M
C701	22342223	Ceramic 0.022 mfd, Z
C702	22447100	Electrolytic 10 mfd/35WV
C703	22448109	Electrolytic 1 mfd/50WV
C704	22447479	Electrolytic 4.7 mfd/35WV
C705	22447479	Electrolytic 4.7 mfd/35WV
C706	22445470	Electrolytic 47 mfd/16WV
TC101	22309104	Trimmer
TC102	22309140	Trimmer

RESISTORS

All fixed resistors are 1/8W, ±5%, carbon film unless otherwise noted.
Tolerance: G: ±2%, J: ±5%, K: ±10%

Symbol No.	Part No.	Description
R001	22573569	Metal Oxide 5.6 ohm, 2W
R002	22571271	Metal Oxide 270 ohm, 1W
R003	22519221	220 ohm
R004	22519473	47K ohm
R005	22519153	15K ohm
R006	22500313	Fusible 2.2 ohm, 1/4W, J
R007	22571121	Metal Oxide 120 ohm, 1W
R008	22519121	120 ohm
R009	22571102	Metal Oxide 1K ohm, 1W
R010	22519121	120 ohm
R011	22519103	10K ohm
R012	22519103	10K ohm
R013	22519473	47K ohm
R014	22519473	47K ohm
R015	22519222	2.2K ohm
R016	22519473	47K ohm

Symbol No.	Part No.	Description
R101	22519471	470 ohm
R102	22519561	560 ohm
R103	22519220	22 ohm
R104	22571121	Metal Oxide 120 ohm, 1W
R105	22519474	470K ohm
R106	22519474	470K ohm
R107	22519561	560 ohm
R108	22519822	8.2K ohm
R109	22519391	390 ohm
R110	22519391	390 ohm
R111	22519561	560 ohm
R112	22519822	8.2K ohm
R113	22519223	22K ohm
R114	22519473	47K ohm
R115	22519224	220K ohm
R116	22519681	680 ohm
R117	22519102	1K ohm
R118	22519391	390 ohm
R119	22519683	68K ohm
R120	22519563	56K ohm
R121	22519391	390 ohm
R122	22519391	390 ohm
R123	22519223	22K ohm
R124	22519223	22K ohm
R125	22519682	6.8K ohm
R126	22519682	6.8K ohm
R127	22519104	100K ohm
R128	22519104	100K ohm
R129	22519152	1.5K ohm
R201	22519220	22 ohm
R202	22519331	330 ohm
R203	22519102	1K ohm
R204	22519331	330 ohm
R205	22519223	22K ohm
R206	22519473	47K ohm
R207	22519222	2.2K ohm
R208	22519273	27K ohm
R209	22519332	3.3K ohm
R210	22519472	4.7K ohm
R211	22519222	2.2K ohm
R212	22519473	47K ohm
R213	22519473	47K ohm
R214	22519561	560 ohm
R215	22519822	8.2K ohm
R216	22519683	68K ohm
R217	22519153	15K ohm
R218	22519473	47K ohm
R219	22519105	1M ohm
R220	22519152	1.5K ohm
R221	22519391	390 ohm
R222	22519682	6.8K ohm
R223	22519102	1K ohm

Symbol No.	Part No.	Description
R224	22519221	220 ohm
R225	22519474	470K ohm
R226	22519472	4.7K ohm
R227	22519561	560 ohm
R228	22519121	120 ohm
R229	22519102	1K ohm
R230	22519103	10K ohm
R231	22519332	3.3K ohm
R232	22519332	3.3K ohm
R233	22519223	22K ohm
R234	22519123	12K ohm
R235	22519561	560 ohm
R236	22519121	120 ohm
R237	22519561	560 ohm
R238	22519471	470 ohm
R239	22519474	470K ohm
R241	22519561	560 ohm
R242	22519104	100K ohm
R243	22519153	15K ohm
R244	22519682	6.8K ohm
R245	22519681	680 ohm
R246	22519104	100K ohm
R247	22519683	68K ohm
R248	22519682	6.8K ohm
R249	22519391	390 ohm
R250	22519224	220K ohm
R251	22519102	1K ohm
R252	22519104	100K ohm
R253	22571391	Metal Oxide 390 ohm, 1W
R254	22519562	5.6K ohm
R255	22519683	68K ohm
R256	22519224	220K ohm
R257	22519683	68K ohm
R258	22519222	2.2K ohm
R259	22519102	1K ohm
R260	22500246	Fusible 47 ohm, 1/4W, J
R261	22519682	6.8K ohm
R262	22519562	5.6K ohm
R263	22519683	68K ohm
R264	22519683	68K ohm
R265	22519332	3.3K ohm
R266	22519271	270 ohm
R267	22519123	12K ohm
R268	22519102	1K ohm
R269	22519104	100K ohm
R270	22519104	100K ohm
R271	22519224	220K ohm
R272	22519473	47K ohm
R273	22519124	120K ohm
R274	22519102	1K ohm
R275	22519123	12K ohm
R276	22519104	100K ohm
R277	22519124	120K ohm

Symbol No.	Part No.	Description
R278	22519124	120K ohm
R279	22519105	1M ohm
R280	22519105	1M ohm
R281	22519100	10 ohm
R282	22519100	10 ohm
R283	22519152	1.5K ohm
R284	22519152	1.5K ohm
R285	22519332	3.3K ohm
R286	22519332	3.3K ohm
R287	22519822	8.2K ohm
R288	22519822	8.2K ohm
R289	22519393	39K ohm
R290	22519393	39K ohm
R291	22519473	47K ohm
R292	22519473	47K ohm
R293	22519153	15K ohm
R294	22519681	680 ohm
R295	22519473	47K ohm
R296	22519822	8.2K ohm
R297	22519474	470K ohm
R298	22519473	47K ohm
R299	22519682	6.8K ohm
R300	22519682	6.8K ohm
R301	22519225	2.2M ohm
R302	22519225	2.2M ohm
R303	22519225	2.2M ohm
R304	22519225	2.2M ohm
R305	22519224	220K ohm
R306	22519224	220K ohm
R307	22519104	100K ohm
R308	22519103	10K ohm
R601	22519333	33K ohm
R602	22519121	120 ohm
R603	22519681	680 ohm
R604	22519124	120K ohm
R605	22519102	1K ohm
R606	22519473	47K ohm
R607	22519682	6.8K ohm
R608	22519681	680 ohm
R609	22519224	220K ohm
R610	22519102	1K ohm
R611	22519222	2.2K ohm
R612	22519222	2.2K ohm
R614	22519332	3.3K ohm
R615	22519332	3.3K ohm
R616	22519102	1K ohm
R617	22519102	1K ohm
R618	22519562	5.6K ohm
R619	22519473	47K ohm
R620	22519104	100K ohm
R621	22519563	56K ohm
R622	22519103	10K ohm

Symbol No.	Part No.	Description
R623	22500246	Fusible 47 ohm, 1/4W, J
R624	22519121	120 ohm
R625	22519473	47K ohm
R626	22519473	47K ohm
R627	22519473	47K ohm
R628	22519473	47K ohm
R629	22519473	47K ohm
R630	22519104	100K ohm
R631	22519104	100K ohm
R632	22519104	100K ohm
R633	22519104	100K ohm
R634	22519104	100K ohm
R635	22519121	120 ohm
R636	22519104	100K ohm
R637	22519104	100K ohm
R638	22519104	100K ohm
R639	22519104	100K ohm
R640	22519104	100K ohm
R641	22519104	100K ohm
R642	22519104	100K ohm
R643	22519333	33K ohm
R644	22519333	33K ohm
R645	22519333	33K ohm
R646	22519333	33K ohm
R647	22519104	100K ohm
R648	22519104	100K ohm
R649	22519104	100K ohm
R650	22519104	100K ohm
R651	22519104	100K ohm
R652	22519473	47K ohm
R653	22519473	47K ohm
R654	22519473	47K ohm
R655	22519473	47K ohm
R656	22519103	10K ohm
R657	22519103	10K ohm
R658	22519103	10K ohm
R659	22519103	10K ohm
R660	22519473	47K ohm
R661	22519473	47K ohm
R662	22519473	47K ohm
R663	22519473	47K ohm
R664	22519182	1.8K ohm
R665	22519182	1.8K ohm
R666	22519182	1.8K ohm
R667	22519103	10K ohm
R668	22519103	10K ohm
R669	22519103	10K ohm
R670	22519103	10K ohm
R671	22519103	10K ohm
R672	22519103	10K ohm
R673	22519103	10K ohm
R674	22519103	10K ohm
R675	22519104	100K ohm

Symbol No.	Part No.	Description
R676	22519104	100K ohm
R677	22519104	100K ohm
R678	22519104	100K ohm
R679	22519104	100K ohm
R680	22519104	100K ohm
R681	22519104	100K ohm
R682	22519104	100K ohm
R683	22519223	22K ohm
R684	22519223	22K ohm
R685	22519223	22K ohm
R686	22519223	22K ohm
R687	22519223	22K ohm
R688	22519223	22K ohm
R689	22519123	12K ohm
R690	22519123	12K ohm
R691	22519333	33K ohm
R701	22519104	100K ohm
R702	22519104	100K ohm
R703	22519104	100K ohm
R704	22519104	100K ohm
R705	22519471	470 ohm
R706	22519472	4.7K ohm
R707	22519183	18K ohm
R708	22519104	100K ohm
R709	22519153	15K ohm
R710	22519682	6.8K ohm
R711	22519122	1.2K ohm
SVR201	22658455	Semi-fixed 20K ohm
SVR202	22658514	Semi-fixed 10K ohm
SVR203	22658446	Semi-fixed 50K ohm
SVR601	22658443	Semi-fixed 500 ohm
MISCELLANEOUS		
CF201	22153146	Ceramic Filter
CF202	22153146	Ceramic Filter
CF203	22153146	Ceramic Filter
F001	22144192	Fuse 0.5A T
F002	22144192	Fuse 0.5A T
F003	22144192	Fuse 0.5A T
	22165047	Fuse Holder
FL1	22104572	FIP7G8B
J1	22164880	Antenna DIN Plug
J2	22162394	1P Terminal
J3	22163904	US2P Jack

Symbol No.	Part No.	Description
J4	22167963	10P Socket Cord
P1	22176632	Power Cord E2
PT1	22224611	Power Transformer
S1 ∿ 12	22190036	Key Switch
S13	22190035	Push Switch
S14	22190035	Push Switch
TM1	22162368	B3P Terminal
X1	22153200	X'Tal

EXPLODED VIEW PARTS LIST

Symbol No.	Part No.	Description
1	20015883	Main Chassis
2	20735742	Bracket L
3	20735740	Bracket R
4	20848689	Cabinet
5	20836740	Front Panel Assembly
9	20874703	Push Button A Assembly
10	22776706	Push Spring
11	20773926	Spacer
17	20848691	Bottom Cabinet
18	20842653	Foot
19	20015882	Back Chassis
20	22754791	Cord Clamper
21	22184183	Cord Clamper
22	22906641	Voltage Label
23	20747665	LED Support A
24	20747666	LED Support B
25	20747605	P.C. Board Support
26	22758527	Cushion
27	22758528	Cushion
28	22758545	Rubber Cushion
29	22193475	Radio P.C. Board
30	22193476	Control P.C. Board
31	22193477	Terminal P.C. Board
32	22131242	FM Block
33	22748794	Radiator
34	22993614	Band N

Symbol No.	Part No.	Description
SCREWS & RINGS		
N1	20795986	Bind Head 3.0 x 8mm with SW
N2	22701716	Bind Head 3.0 x 14mm
N3	70433016	Bind Head 3.0 x 16mm
N4	22701801	Bind Head 4.0 x 8mm
N5	72633006	Bind Head Tapping 3.0 x 6mm
N6	22701802	Bind Head Tapping 3.0 x 8mm
N7	22701724	Bind Head Tapping 3.0 x 10mm
N8	22701813	Flat Head Tapping 3.0 x 6mm
N9	20795908	Flat Head Tapping 3.0 x 8mm
N10	92707520	Bind Head Tapping 3.0 x 8mm (DT)
N13	74001030	Washer 3.0ϕ
N14	73653000	Nut 3.0ϕ
N15	22702548	Special Nut
N20	20791809	Special Washer
ACCESSORIES		
	22124971	FM Antenna
	22124280	AM Antenna
	22164836	US1P Plug Cord
	22954611	Owner's Manual
	22951862	Warranty Card

MODEL TA2900

1. SPECIFICATIONS

Input Sensitivity and Impedance	
TUNER	150mV/80k ohms
PHONO	2.5mV/47k ohms
TAPE	150mV/80k ohms
Frequency Response	
TUNER/AUX	10 – 80,000 Hz
PHONO (ref. RIAA)	±0.2 dB
Tone Control	
BASS at 100 Hz	±10 dB
TREBLE at 10 kHz	±10 dB
Subsonic Filter (turn-over 20 Hz)	–12 dB/Oct
Loudness Control at 100 Hz	+10 dB
at 10 kHz	+6 dB
Total Harmonic Distortion	0.03%
S/N (IHF A)	
TUNER, TAPE	90 dB
PHONO	75 dB
Power Output	32W per Channel at 8 ohms
Damping Factor	65
Power Supply	∿ 220V, 50 Hz for Continental Europe ∿ 240V, 50 Hz for United Kingdom
Dimensions	430(W) x 60(H) x 254(D) mm
Weight	4.7 kg
Accessories	Shorting Phono Plugs

Specifications are subject to change without notice.

2. DISASSEMBLY INSTRUCTIONS

(1) **Top cover removal**
Remove four screws on the both sides of the set and lift up the top cover.

(2) **Bottom cover removal**
Remove six screws (A) from bottom as shown in Figure 15 and lift up the bottom cover.

(3) **Front panel removal**
Remove three rotary knobs.
Remove six screws (B) from top and bottom as shown in Figure 15 and 16, and the panel can be removed with push buttons.

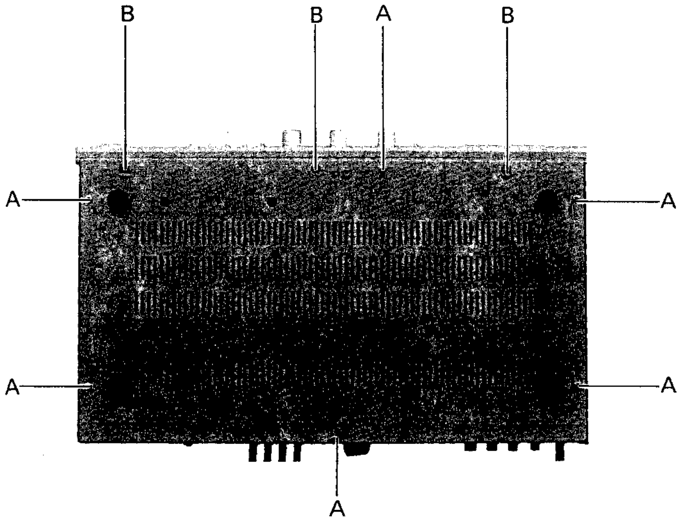


Figure 15

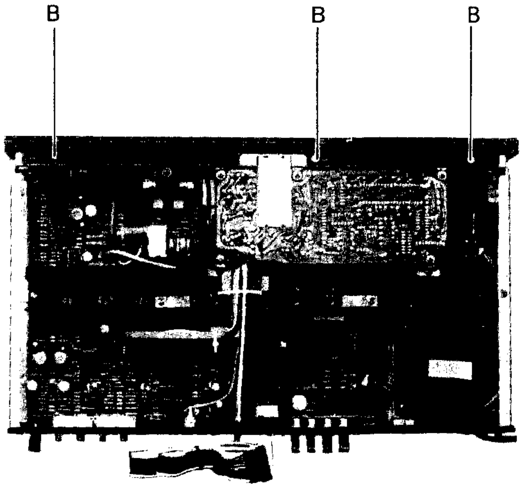


Figure 16

NOTE:
This model has no alignment point.

MODEL TA2900

1. SPECIFICATIONS

Input Sensitivity and Impedance	
TUNER	150mV/80k ohms
PHONO	2.5mV/47k ohms
TAPE	150mV/80k ohms
Frequency Response	
TUNER/AUX	10 – 80,000 Hz
PHONO (ref. RIAA)	±0.2 dB
Tone Control	
BASS at 100 Hz	±10 dB
TREBLE at 10 kHz	±10 dB
Subsonic Filter (turn-over 20 Hz)	−12 dB/Oct
Loudness Control at 100 Hz	+10 dB
at 10 kHz	+6 dB
Total Harmonic Distortion	0.03%
S/N (IHF A)	
TUNER, TAPE	90 dB
PHONO	75 dB
Power Output	32W per Channel at 8 ohms
Damping Factor	65
Power Supply	∿ 220V, 50 Hz for Continental Europe ∿ 240V, 50 Hz for United Kingdom
Dimensions	430(W) x 60(H) x 254(D) mm
Weight	4.7 kg
Accessories	Shorting Phono Plugs

Specifications are subject to change without notice.

2. DISASSEMBLY INSTRUCTIONS

(1) **Top cover removal**

Remove four screws on the both sides of the set and lift up the top cover.

(2) **Bottom cover removal**

Remove six screws (A) from bottom as shown in Figure 15 and lift up the bottom cover.

(3) **Front panel removal**

Remove three rotary knobs.

Remove six screws (B) from top and bottom as shown in Figure 15 and 16, and the panel can be removed with push buttons.

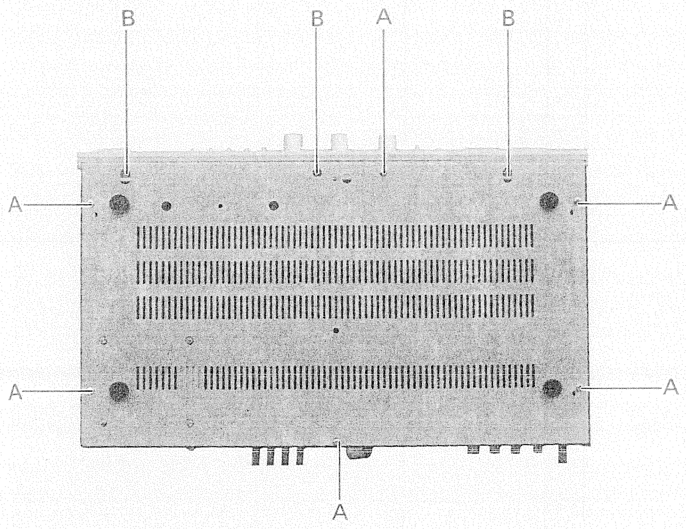


Figure 15

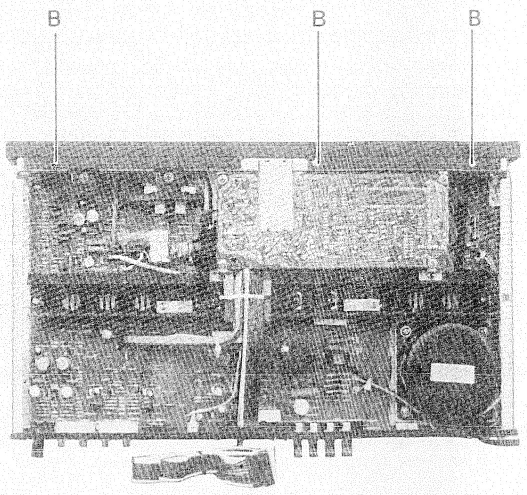


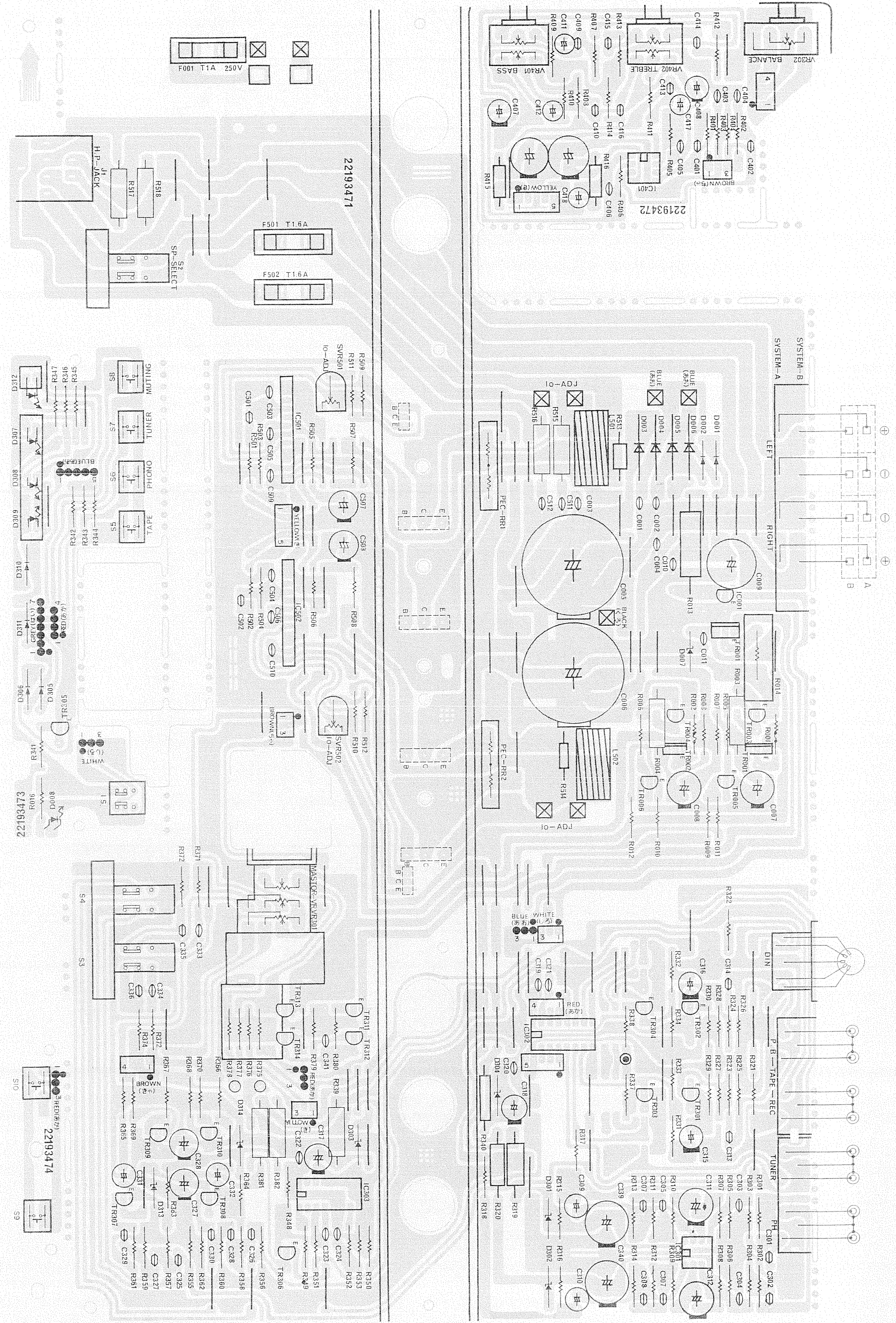
Figure 16

NOTE:

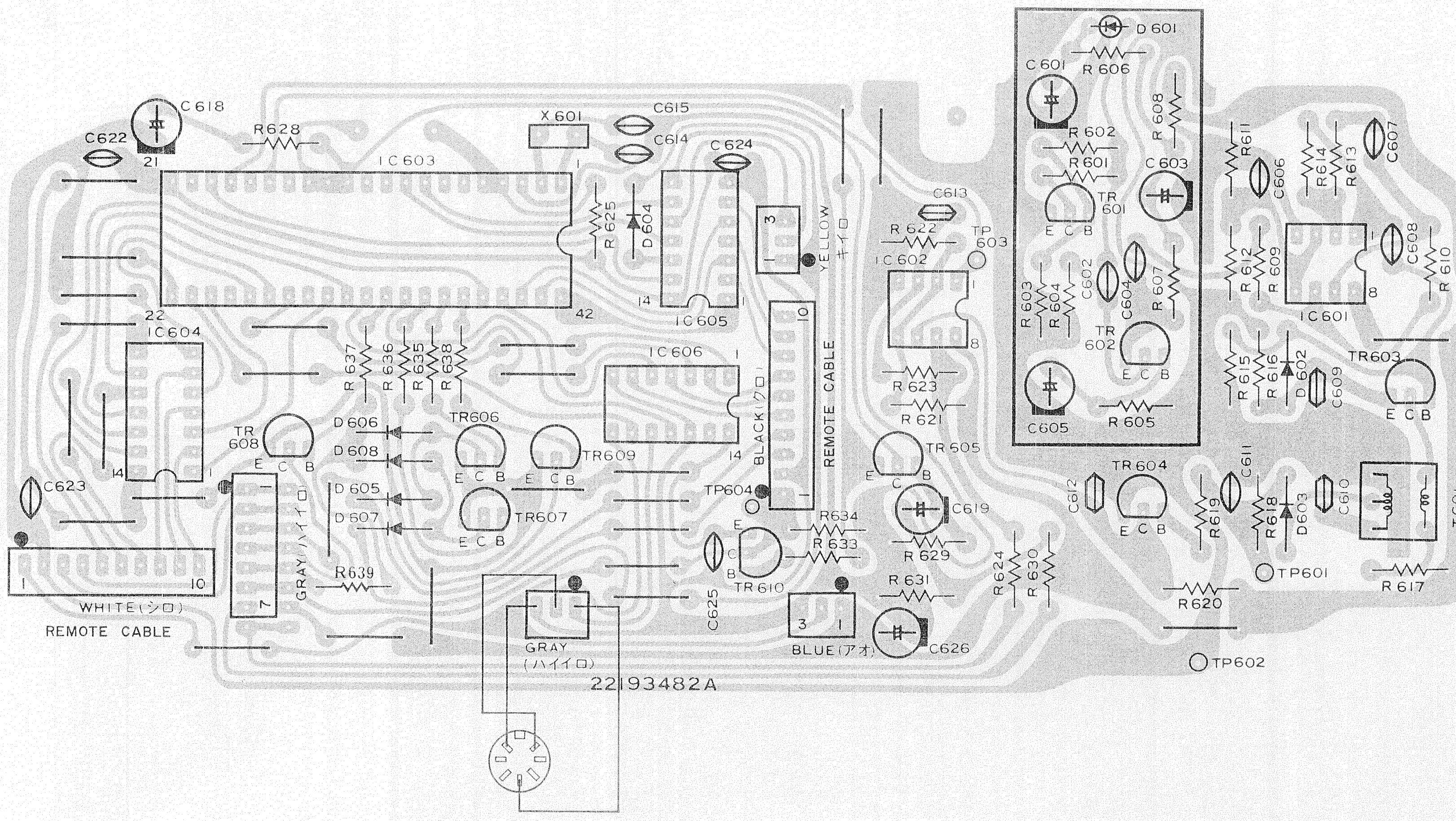
This model has no alignment point.

3. PRINTED CIRCUIT BOARDS

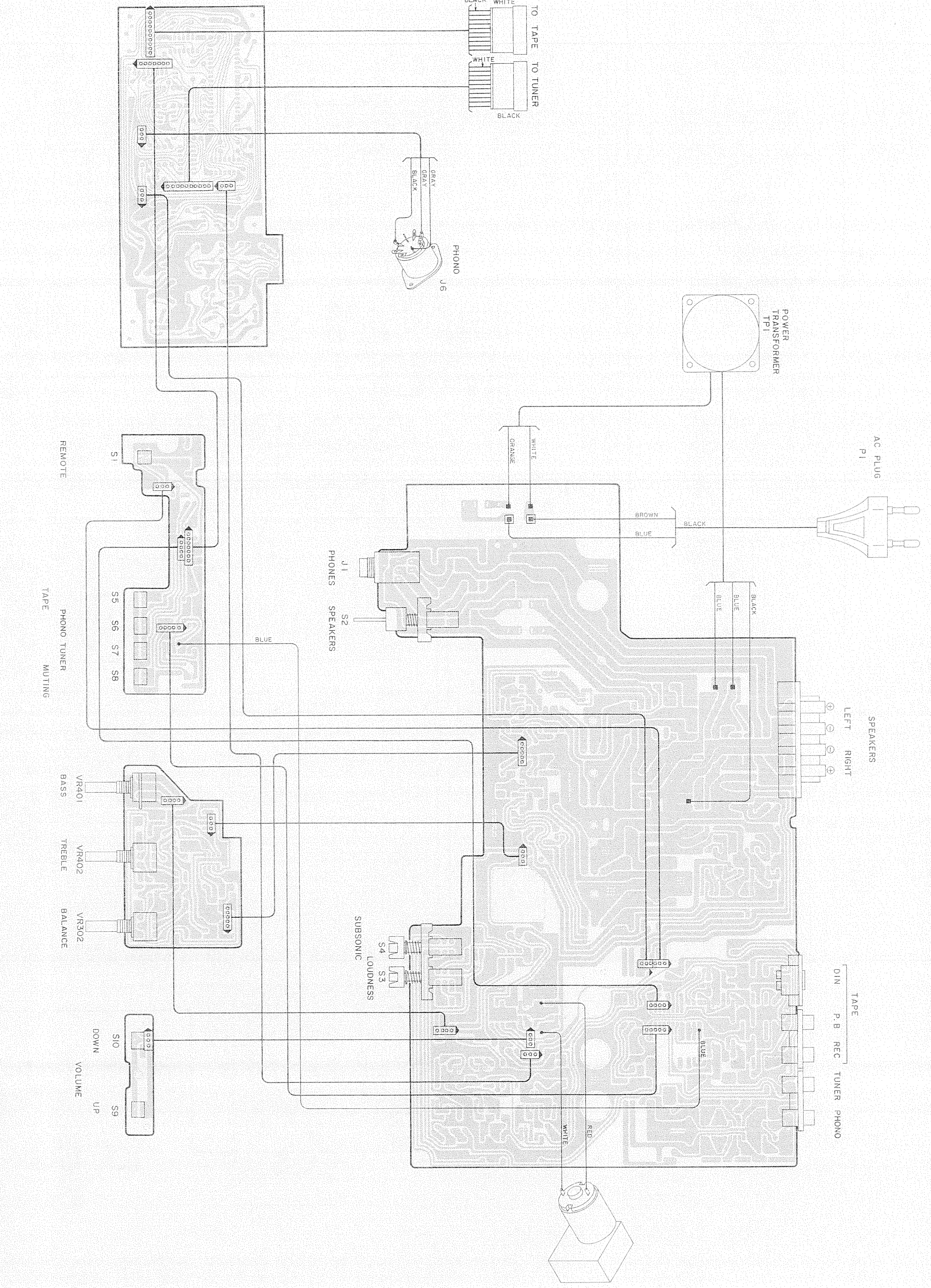
TOP VIEW



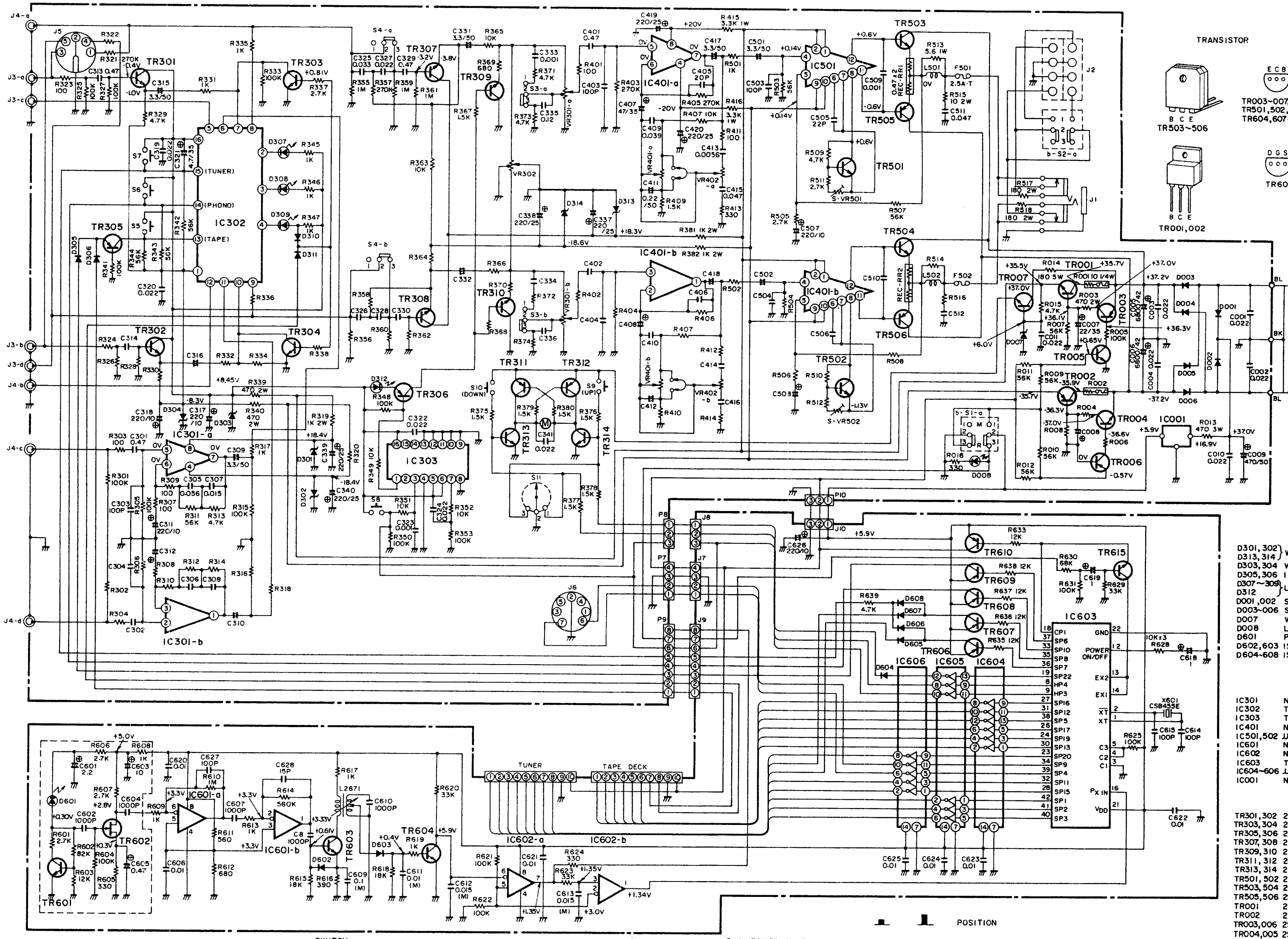
22193471
22193472
22193473
22193474
F001 T1A 250V
H.P.-JACK
SP-SELECT
F501 T1.6A
F502 T1.6A
VR401 BASS
VR402 TREBLE
VR302 BALANCE
SYSTEM-B
SYSTEM-A
LEFT
RIGHT
MUTING
TUNER
PHONO
TAPE
Io-ADJ
PEC-RR1
PEC-RR2
MASTER VOL VR301
DIN
P.B.-TAPE-REC
TUNER
PH

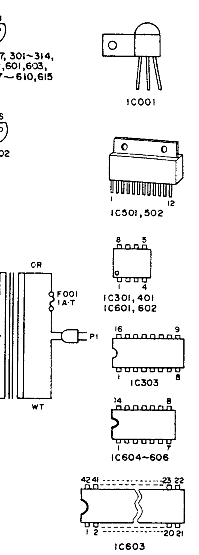

C618
C622
21
R628
IC603
X601
C615
C614
C624
1
22
42
IC604
IC605
14
R625
D604
3
1
YELLOW
キイロ
C613
R622
TP 603
IC602
8
D601
C601
R606
R608
R602
R601
C603
TR 601
E C B
R603
R604
C602
C604
R607
TR 602
C605
R605
R611
C606
R614
R613
C607
R612
R609
IC601
C608
R610
R637
R636
R635
R638
IC606
10
BLACK(クロ)
REMOTE CABLE
R623
R621
TR605
R615
R616
D602
C609
TR603
TR 608
D606
D608
D605
D607
TR606
TR609
TR607
TP604
C623
GRAY(ハイイロ)
7
R639
E C B
E
C
B
TR610
R634
R633
C625
C619
R629
R631
BLUE(アオ)
C626
R624
R630
C612
TR604
C611
R619
R618
D603
C610
T601
TP601
R617
R620
TP602
WHITE(シロ)
REMOTE CABLE
GRAY
(ハイイロ)
22193482A

4. WIRING DIAGRAM


TO TAPE
BLACK
WHITE
TO TUNER
WHITE
BLACK
GRAY
GRAY
BLACK
PHONO
J6
POWER TRANSFORMER
TP1
AC PLUG
P1
ORANGE
WHITE
BROWN
BLUE
BLACK
J1
PHONES
S2
SPEAKERS
BLUE
BLUE
BLACK
SPEAKERS
LEFT
RIGHT
REMOTE
S1
S5
S6
S7
S8
TAPE
PHONO
TUNER
MUTING
BLUE
VR401
BASS
VR402
TREBLE
VR302
BALANCE
S4
SUBSONIC
S3
LOUDNESS
TAPE
DIN
P.B
REC
TUNER
PHONO
BLUE
S10
DOWN
VOLUME
UP
S9
WHITE
RED

5. SCHEMATIC DIAGRAM


J4-a
J3-a
J3-c
J3-b
J3-d
J4-b
J4-c
J4-d
J5
J6
J1
J2
TR301
TR302
TR303
TR304
TR305
TR306
TR307
TR308
TR309
TR310
TR311
TR312
TR313
TR314
TR501
TR502
TR503
TR504
TR505
TR506
TR001
TR002
TR003
TR004
TR005
TR006
TR007
TR601
TR602
TR603
TR604
TR606
TR607
TR608
TR609
TR610
TR615
IC301-a
IC301-b
IC302
IC303
IC401-a
IC401-b
IC501
IC401-b
IC601-a
IC601-b
IC602-a
IC602-b
IC603
IC604
IC605
IC606
IC001
(TUNER)
(PHONO)
(TAPE)
TUNER
TAPE DECK
P7
P8
P9
P10
J7
J8
J9
J10
S-VR501
S-VR502
VR301-a
VR301-b
VR302
VR401-a
VR401-b
VR402-a
VR402-b
REC-RR1
REC-RR2
S10 (DOWN)
S9 (UP)
S11
b-S1-a
b-S2-a
CR
BL
BK
WT
F001 1A-T
P1
F501 2.5A-T
F502
X601 CSB455E
L2671


TRANSISTOR
B C E
TR503~506
E C B
TR003~007, 301~314, TR501,502,601,603, TR604,607~610,615
B C E
TR001,002
D G S
TR602
IC001
1
12
IC501,502
8
5
1
4
IC301,401
IC601,602
16
9
1
8
IC303
14
8
1
7
IC604~606
42 41
23 22
1 2
20 21
IC603

D301,302 D313,314	WZ182	VOLTAGE REGULATOR
D303,304	WZ081	
D305,306	1S1555V	SWITCHING
D307~309 D312	LN224RP	FUNCTION & MUTING DISPLAY
D001,002	S5277B	RECTIFIRE
D003~006	S2V10	RECTIFIRE
D007	WZ061	REGULATOR
D008	LN31G CP. HL	POWER STANDRY DISPLAY
D601	PH302	REMOTE SIGNAL RECEIVE
D602,603	1S1555V	DETECTOR
D604~608	1S1555V	SWITCHING

IC301	NJM4560DX	EQ AMP
IC302	TC9145P	FUNCTION SELECT
IC303	TC4027BP	AUDIO MUTING CONTROL
IC401	NJM4560DX	TONE AMP
IC501,502	μPC1225H	POWER AMP DRIVER
IC601	NJM4556D	REMOTE CONTROL AMP
IC602	NJM4556D	BUFFER
IC603	TC9134P	REMOTE CONTROL DECORDER
IC604~606	μPD4069BC	INVERTE BUFFER
IC001	NJM78L06	VOLTAGE REGULATOR

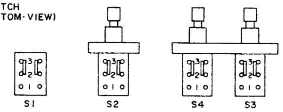
TR301,302	2SC2240	BUFFER AMP
TR303,304	2SC1815	MUTING
TR305,306	2SA1015	SWITCHING
TR307,308	2SC2240	FILTER ANP
TR309,310	2SC1923	AUDIO MUTING
TR311,312	2SA950	SWITCHING
TR313,314	2SC2120	
TR501,502	2SC1815	THERMAL PROTECTOR
TR503,504	2SD716	POWER AMP
TR505,506	2SB686	
TR001	2SC1173	POWER SWITCHING
TR002	2SA473	
TR003,006	2SA1015	SWITCHING
TR004,005	2SC1815	
TR007	2SC2120	VOLTAGE REGULATOR
TR601	2SC1815	CURRENT CONTROL
TR602	2SK117	REMOTE CONTROL AMP
TR603,604	2SC1815	
TR607~610	2SA1015	BUFFER
TR615	2SC1815	POWER INITIAL RISE

NOTE

1) ALL RESISTANCE VALUES ARE IN OHMS.
ALL CAPACITANCE VALUES ARE IN MICROFARADS.
K=1000 M=1000 000 P=1/1000 000

2) COMPONENTS AND VALUES ARE SUBJECT TO CHANGE WITHOUT NOTICE FOR IMPROVEMENT.

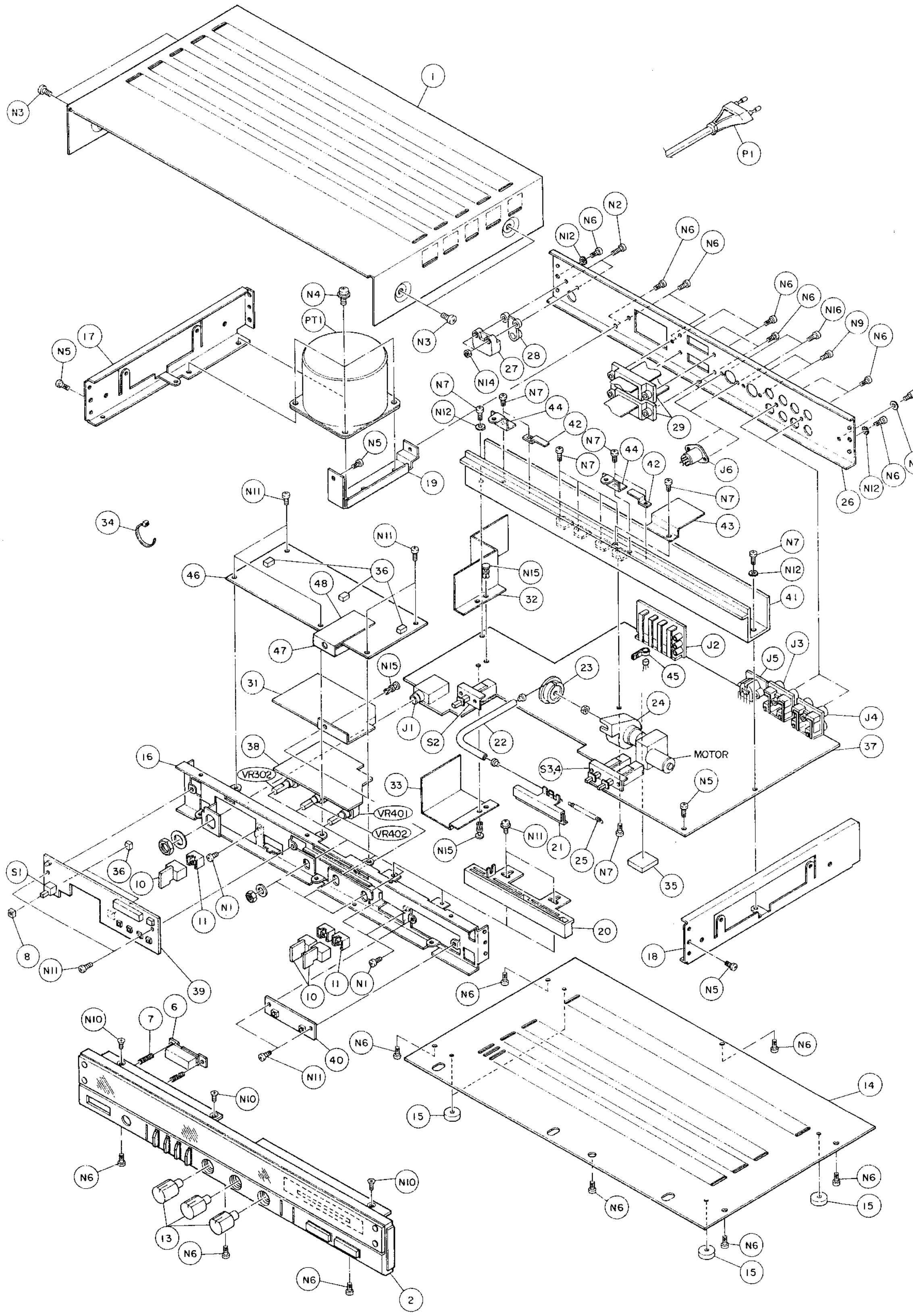
SWITCH
(BOTTOM-VIEW)


3
2
S1
S2
S4
S3

				POSITION
S1:	POWER-SWITCH	MANUAL	– REMOTE	----REMOTE
S2:	SPEAKER-SELECT-SWITCH	A	– A+B	-------A
S3:	LOUDNESS-SWITCH	ON	– OFF	------OFF
S4:	SUBSONIC-FILTER-SWITCH	ON	– OFF	-------OFF
S5:	FUNCTION-SWITCH(TAPE)	ON	– OFF	---TUNER
S6:	FUNCTION-SWITCH(PHONO)	ON	– OFF	
S7:	FUNCTION-SWITCH(TUNER)	ON	– OFF	
S8:	MUTING-SWITCH	0dB	– 20dB	------0dB
S9:	VOLUME-SWITCH(UP)	ON	– OFF	------OFF
S10:	VOLUME-SWITCH(DOWN)	ON	– OFF	------OFF

6. EXPLODED VIEW AND PARTS LISTS

EXPLODED VIEW


1
N3
P1
N2
N6
N12
N6
N6
N4
PT1
N3
17
N5
N6
N6
N16
N9
N6
28
27
N14
N7
N7
N12
44
42
29
30
N7
N7
44
42
N13
N6
N12
J6
26
N5
19
N7
43
N11
34
N11
N7
N12
36
N15
46
48
32
41
J2
47
45
J3
N15
23
J5
31
24
J4
J1
S2
22
37
38
MOTOR
16
VR302
S3,4
N5
33
VR401
VR402
N11
N15
21
25
N7
35
S1
36
10
N1
11
20
18
8
N11
11
N1
10
N6
N5
39
N10
7
6
N6
N6
40
N11
14
N10
15
N6
N10
N6
N6
15
13
N6
N6
15
N6
2

PARTS LIST

ELECTRICAL PARTS

Symbol No.	Part No.	Description
ICs		
IC001	22114991	IC, NJM78L06
IC301	22114866	IC, NJM4560DX
IC302	40411450	IC, TC9145P
IC303	40470275	IC, TC4027BP
IC401	22114866	IC, NJM4560DX
IC501	22117001	IC, μPC1225H
IC502	22117001	IC, μPC1225H
IC601	22114865	IC, NJM4556D
IC602	22114865	IC, NJM4556D
IC603	40411340	IC, TC9134P
IC604	22117002	IC, μPD4069BC
IC605	22117002	IC, μPD4069BC
IC606	22117002	IC, μPD4069BC
TRANSISTORS & DIODES Symbol No. with TR: Transistor Symbol No. with D: Diode		
TR001	36771640	2SC1173-Y
TR002	36500740	2SA473-Y
TR003	36534060	2SA1015-GR
TR004	36317480	2SC1815-BL
TR005	36317480	2SC1815-BL
TR006	36534060	2SA1015-GR
TR007	36321240	2SC2120-Y
TR301	36325845	2SC2240-BL
TR302	36325845	2SC2240-BL
TR303	36319020	2SC1923-O
TR304	36319020	2SC1923-O
TR305	36534060	2SA1015-GR
TR306	36534060	2SA1015-GR
TR307	36325845	2SC2240-BL
TR308	36325845	2SC2240-BL
TR309	36319020	2SC1923-O
TR310	36319020	2SC1923-O
TR311	36532940	2SA950-Y
TR312	36532940	2SA950-Y
TR313	36321240	2SC2120-Y
TR314	36321240	2SC2120-Y
TR501	36317480	2SC1815-BL
TR502	36317480	2SC1815-BL
TR503	36845651	2SD716-O. LB
TR504	36845651	2SD716-O. LB
or		
TR503	36845626	2SD716-R. LB
TR504	36845626	2SD716-R. LB
TR505	36625151	2SB686-O. LB
TR506	36625151	2SB686-O. LB
or		
TR505	36625126	2SB686-R. LB
TR506	36625126	2SB686-R. LB
TR601	36317480	2SC1815-BL
TR602	36041866	2SK117-GR
TR603	36317480	2SC1815-BL
TR604	36317480	2SC1815-BL
TR605	36317480	2SC1815-BL
TR606	36534060	2SA1015-GR
TR607	36534060	2SA1015-GR
TR608	36534060	2SA1015-GR
TR609	36534060	2SA1015-GR
TR610	36534060	2SA1015-GR
D001	37978380	S5277B
D002	37978380	S5277B
D003	22115722	S2V10-X
D004	22115722	S2V10-X
D005	22115722	S2V10-X
D006	22115722	S2V10-X
D007	22115246	WZ061
D008	22115724	LN31GCP. HL
D301	22115332	WZ182
D302	22115332	WZ182
D303	22115300	WZ081
D304	22115300	WZ081
D305	37246745	1S1555V-TP3
D306	37246745	1S1555V-TP3
D307	22115723	LN224RP
D308	22115723	LN224RP
D309	22115723	LN224RP
D310	37246745	1S1555V-TP3
D311	37246745	1S1555V-TP3
D312	22115723	LN224RP
D313	22115332	WZ182
D314	22115332	WZ182
D601	22115727	PH302
D602	37246745	1S1555V-TP3
D603	37246745	1S1555V-TP3
D604	37246745	1S1555V-TP3
D605	37246745	1S1555V-TP3
D606	37246745	1S1555V-TP3
D607	37246745	1S1555V-TP3
D608	37246745	1S1555V-TP3

CAPACITORS

Tolerance: D: ±0.5PF, J: ±5%, K: ±10%, M: ±20%,
P: +100 to –0%, Z: +80 to –20%, G: ±2%
(N): Non Polarity type

Symbol No.	Part No.	Description
C001	22342223	Ceramic 0.022 mfd, Z
C002	22342223	Ceramic 0.022 mfd, Z
C003	22342223	Ceramic 0.022 mfd, Z
C004	22342223	Ceramic 0.022 mfd, Z
C005	22440474	Electrolytic 6800 mfd/45WV
C006	22440474	Electrolytic 6800 mfd/45WV
C007	22448220	Electrolytic 22 mfd/50WV
C008	22448220	Electrolytic 22 mfd/50WV
C009	22440473	Electrolytic 470 mfd/50WV
C010	22342223	Ceramic 0.022 mfd, Z
C011	22342223	Ceramic 0.022 mfd, Z
C301	22370288	Mylar 0.47 mfd, J
C302	22370288	Mylar 0.47 mfd, J
C303	22361101	Ceramic 100 PF, J
C304	22361101	Ceramic 100 PF, J
C305	22371563	Mylar 0.056 mfd, J
C306	22371563	Mylar 0.056 mfd, J
C307	22370309	Mylar 0.016 mfd, J
C308	22370309	Mylar 0.016 mfd, J
C309	22403098	Electrolytic 3.3 mfd/25WV(N)
C310	22403098	Electrolytic 3.3 mfd/25WV(N)
C311	22440395	Electrolytic 470 mfd/10WV
C312	22440395	Electrolytic 470 mfd/10WV
C313	22370288	Mylar 0.47 mfd, J
C314	22370288	Mylar 0.47 mfd, J
C315	22403098	Electrolytic 3.3 mfd/25WV(N)
C316	22403098	Electrolytic 3.3 mfd/25WV(N)
C317	22443221	Electrolytic 220 mfd/10WV
C318	22443221	Electrolytic 220 mfd/10WV
C319	22342223	Ceramic 0.022 mfd, Z
C320	22342223	Ceramic 0.022 mfd, Z
C321	22342473	Ceramic 0.047 mfd, Z
C322	22342223	Ceramic 0.022 mfd, Z
C323	22343102	Ceramic 0.001 mfd, M
C324	22342223	Ceramic 0.022 mfd, Z
C325	22371333	Mylar 0.033 mfd, J
C326	22371333	Mylar 0.033 mfd, J
C327	22371223	Mylar 0.022 mfd, J
C328	22371223	Mylar 0.022 mfd, J
C329	22370288	Mylar 0.47 mfd, J
C330	22370288	Mylar 0.47 mfd, J
C331	22403098	Electrolytic 3.3 mfd/25WV(N)
C332	22403098	Electrolytic 3.3 mfd/25WV(N)
C333	22343102	Ceramic 0.001 mfd, M
C334	22343102	Ceramic 0.001 mfd, M
C335	22371104	Mylar 0.1 mfd, J
C336	22371104	Mylar 0.1 mfd, J
C337	22446221	Electrolytic 220 mfd/25WV
C338	22446221	Electrolytic 220 mfd/25WV

Symbol No.	Part No.	Description
C339	22446221	Electrolytic 220 mfd/25WV
C340	22446221	Electrolytic 220 mfd/25WV
C341	22342223	Ceramic 0.022 mfd, Z
C401	22370288	Mylar 0.47 mfd, J
C402	22370288	Mylar 0.47 mfd, J
C403	22361101	Ceramic 100 PF, J
C404	22361101	Ceramic 100 PF, J
C405	22361220	Ceramic 22 PF, J
C406	22361220	Ceramic 22 PF, J
C407	22447470	Electrolytic 47 mfd/35WV
C408	22447470	Electrolytic 47 mfd/35WV
C409	22371393	Mylar 0.039 mfd, J
C410	22371393	Mylar 0.039 mfd, J
C411	22403100	Electrolytic 0.22 mfd/50WV(N)
C412	22403100	Electrolytic 0.22 mfd/50WV(N)
C413	22371562	Mylar 0.0056 mfd, J
C414	22371562	Mylar 0.0056 mfd, J
C415	22371473	Mylar 0.047 mfd, J
C416	22371473	Mylar 0.047 mfd, J
C417	22403098	Electrolytic 3.3 mfd/25WV(N)
C418	22403098	Electrolytic 3.3 mfd/25WV(N)
C419	22446221	Electrolytic 220 mfd/25WV
C420	22446221	Electrolytic 220 mfd/25WV
C501	22403098	Electrolytic 3.3 mfd/25WV(N)
C502	22403098	Electrolytic 3.3 mfd/25WV(N)
C503	22361101	Ceramic 100 PF, J
C504	22361101	Ceramic 100 PF, J
C505	22361220	Ceramic 22 PF, J
C506	22361220	Ceramic 22 PF, J
C507	22443221	Electrolytic 220 mfd/10WV
C508	22443221	Electrolytic 220 mfd/10WV
C509	22343102	Ceramic 0.001 mfd, M
C510	22343102	Ceramic 0.001 mfd, M
C511	22342473	Ceramic 0.047 mfd, Z
C512	22342473	Ceramic 0.047 mfd, Z
C601	22440315	Electrolytic 2.2 mfd/50WV
C602	22343102	Ceramic 0.001 mfd, M
C603	22445100	Electrolytic 10 mfd/16WV
C604	22343102	Ceramic 0.001 mfd, M
C605	22448478	Electrolytic 0.47 mfd/50WV
C606	22342103	Ceramic 0.01 mfd, Z
C607	22343102	Ceramic 0.001 mfd, M
C608	22343102	Ceramic 0.001 mfd, M
C609	22372104	Mylar 0.1 mfd, K
C610	22391102	Polypropylene 1000 PF/50WV, J
C611	22372103	Mylar 0.01 mfd, K
C612	22372153	Mylar 0.015 mfd, K
C613	22372153	Mylar 0.015 mfd, K
C614	22360638	Ceramic 100 PF, J
C615	22360638	Ceramic 100 PF, J

Symbol No.	Part No.	Description
C618	22448109	Electrolytic 1 mfd/50WV
C619	22448109	Electrolytic 1 mfd/50WV
C622	22342103	Ceramic 0.01 mfd, Z
C623	22342103	Ceramic 0.01 mfd, Z
C624	22342103	Ceramic 0.01 mfd, Z
C625	22342103	Ceramic 0.01 mfd, Z
C626	22443101	Electrolytic 100 mfd/10WV
C627	22361101	Ceramic 100 PF, K
C628	22361150	Ceramic 15 PF, J

RESISTORS

All fixed resistors are 1/8W, ±5%, Carbon resistor unless otherwise noted.
Tolerance: G: ±2%, J: ±5%, K: ±10%

Symbol No.	Part No.	Description
R001	22500314	Fusible 10 ohm, 1/4W, J
R002	22500314	Fusible 10 ohm, 1/4W; J
R003	22573471	Metal Oxide 470 ohm, 2W
R004	22573471	Metal Oxide 470 ohm, 2W
R005	22519104	100K ohm
R006	22519104	100K ohm
R007	22519563	56K ohm
R008	22519563	56K ohm
R009	22519563	56K ohm
R010	22519563	56K ohm
R011	22519563	56K ohm
R012	22519563	56K ohm
R013	22575471	Metal Oxide 470 ohm, 3W
R014	22500270	Cemented 180 ohm, 5W, J
R015	22519472	4.7K ohm
R016	22519471	330 ohm
R301	22519104	100K ohm
R302	22519104	100K ohm
R303	22519101	100 ohm
R304	22519101	100 ohm
R305	22519104	100K ohm
R306	22519104	100K ohm
R307	22519101	100 ohm
R308	22519101	100 ohm
R309	22519101	100 ohm
R310	22519101	100 ohm
R311	22519563	56K ohm
R312	22519563	56K ohm
R313	22519472	4.7K ohm
R314	22519472	4.7K ohm
R315	22519104	100K ohm
R316	22519104	100K ohm
R317	22519102	1K ohm
R318	22519102	1K ohm
R319	22573102	Metal Oxide 1K ohm, 2W
R320	22573102	Metal Oxide 1K ohm, 2W
R321	22519274	270K ohm

Symbol No.	Part No.	Description
R322	22519274	270K ohm
R323	22519101	100 ohm
R324	22519101	100 ohm
R325	22519104	100K ohm
R326	22519104	100K ohm
R327	22519104	100K ohm
R328	22519104	100K ohm
R329	22519472	4.7K ohm
R330	22519472	4.7K ohm
R331	22519102	1K ohm
R332	22519102	1K ohm
R333	22519104	100K ohm
R334	22519104	100K ohm
R335	22519102	1K ohm
R336	22519102	1K ohm
R337	22519272	2.7K ohm
R338	22519272	2.7K ohm
R339	22573471	Metal Oxide 470 ohm, 2W
R340	22573471	Metal Oxide 470 ohm, 2W
R341	22519104	100K ohm
R342	22519563	56K ohm
R343	22519563	56K ohm
R344	22519563	56K ohm
R345	22519102	1K ohm
R346	22519102	1K ohm
R347	22519102	1K ohm
R348	22519104	100K ohm
R349	22519103	10K ohm
R350	22519104	100K ohm
R351	22519103	10K ohm
R352	22519103	10K ohm
R353	22519104	100K ohm
R355	22519105	1M ohm
R356	22519105	1M ohm
R357	22519274	270K ohm
R358	22519274	270K ohm
R359	22519105	1M ohm
R360	22519105	1M ohm
R361	22519105	1M ohm
R362	22519105	1M ohm
R363	22519103	10K ohm
R364	22519103	10K ohm
R365	22519103	10K ohm
R366	22519103	10K ohm
R367	22519152	1.5K ohm
R368	22519152	1.5K ohm
R369	22519681	680 ohm
R370	22519681	680 ohm
R371	22519472	4.7K ohm
R372	22519472	4.7K ohm
R373	22519472	4.7K ohm
R374	22519472	4.7K ohm
R375	22519152	1.5K ohm
R376	22519152	1.5K ohm

Symbol No.	Part No.	Description
R377	22519152	1.5K ohm
R378	22519152	1.5K ohm
R379	22519152	1.5K ohm
R380	22519152	1.5K ohm
R381	22573102	Metal Oxide 1K ohm, 2W
R382	22573102	Metal Oxide 1K ohm, 2W
R401	22519101	100 ohm
R402	22519101	100 ohm
R403	22519274	270K ohm
R404	22519274	270K ohm
R405	22519274	270K ohm
R406	22519274	270K ohm
R407	22519103	10K ohm
R408	22519103	10K ohm
R409	22519152	1.5K ohm
R410	22519152	1.5K ohm
R411	22519101	100 ohm
R412	22519101	100 ohm
R413	22519331	330 ohm
R414	22519331	330 ohm
R415	22571332	Metal Oxide 3.3K ohm, 1W
R416	22571332	Metal Oxide 3.3K ohm, 1W
R501	22519102	1K ohm
R502	22519102	1K ohm
R503	22519563	56K ohm
R504	22519563	56K ohm
R505	22519272	2.7K ohm
R506	22519272	2.7K ohm
R507	22519563	56K ohm
R508	22519563	56K ohm
R509	22519472	4.7K ohm
R510	22519472	4.7K ohm
R511	22519272	2.7K ohm
R512	22519272	2.7K ohm
R513	22571569	Metal Oxide 5.6 ohm, 1W
R514	22571569	Metal Oxide 5.6 ohm, 1W
R515	22573100	Metal Oxide 10 ohm, 2W
R516	22573100	Metal Oxide 10 ohm, 2W
R517	22573181	Metal Oxide 180 ohm, 2W
R518	22573181	Metal Oxide 180 ohm, 2W
R601	22519272	2.7K ohm
R602	22519823	82K ohm
R603	22519123	12K ohm
R604	22519104	100K ohm
R605	22519331	330 ohm
R606	22519272	2.7K ohm
R607	22519272	2.7K ohm
R608	22519102	1K ohm
R609	22519102	1K ohm
R610	22519105	1M ohm
R611	22519561	560 ohm

Symbol No.	Part No.	Description
R612	22519681	680 ohm
R613	22519102	1K ohm
R614	22519564	560K ohm
R615	22519183	18K ohm
R616	22519391	390 ohm
R617	22519102	1K ohm
R618	22519682	6.8K ohm
R619	22519102	1K ohm
R620	22519333	33K ohm
R621	22519104	100K ohm
R622	22519104	100K ohm
R623	22519333	33K ohm
R624	22519331	330 ohm
R625	22519104	100K ohm
R628	22519103	10K ohm
R629	22519333	33K ohm
R630	22519823	82K ohm
R631	22519104	100K ohm
R633	22519123	12K ohm
R634	22519103	10K ohm
R635	22519123	12K ohm
R636	22519123	12K ohm
R637	22519123	12K ohm
R638	22519123	12K ohm
RR501	22135027	Multiple Component
RR502	22135027	Multiple Component
SVR501	22658621	Semi-Fixed 1K ohm
SVR502	22658621	Semi-Fixed 1K ohm
VR301	22620231	Variable 100K ohm
VR302	22620234	Variable 100K ohm
VR401	22620232	Variable 100K ohm
VR402	22620233	Variable 100K ohm
MISCELLANEOUS		
F001	22144185	Fuse 1A, T
F501, 502	22144450	Fuse 2.5A, T
J1	22163822	Jack 6.5ϕ
J2	22162383	Speaker Terminal 8P
J3, 4	22163901	US4P Jack
J5	22167910	DIN5P Socket
J6	22167962	DIN7P Socket
L501, 502	22211228	Choke Coil, AF
P1	22176632	Power Cord E2
PT1	22224610	Power Transformer (220V)
	22224610	Power Transformer (240V)
S1	22190035	Push Switch
S2	22190039	Push Switch

Symbol No.	Part No.	Description
S3, 4	22190038	Push Switch
S5 ∿ 10	22190036	Key Switch
T601	22224609	AF Transformer
X601	22153199	Ceramic Resonator

EXPLODED VIEW PARTS LIST

Symbol No.	Part No.	Description
1	20848690	Cabinet
2	20836739	Front Panel Assembly
6	20874703	Push Button A Assembly
7	22776706	Spring
8	20773929	Spacer A
10	20874700	Push Button
11	20743991	Button Guide
13	20872668	Volume Knob
14	20848692	Bottom Cabinet
15	20842653	Foot
16	20015880	Main Chassis
17	20735741	Bracket L
18	20735739	Bracket R
19	20747661	Power Transformer Support
20	20015884	Rail
21	20042724	Pointer
22	22746697	Wire Remote
23	20042725	Drum
24	20848698	Drum Cover
25	22776713	Pull Spring
26	20015881	Back Chassis
27	22754791	Cord Clamper
28	22184183	Cord Clamper
29	22184207	Cord Clamper
30	22162380	S1P Terminal
31	22748924	Shield Plate
32	22748923	Barrier
33	22748925	Barrier
34	22993614	Band N
35	22758537	Rubber Cushion
36	22758548	Rubber Cushion
37	22193471	AF P.C. Board
38	22193472	Tone P.C. Board
39	22193473	LED P.C. Board
40	22193474	Switch P.C. Board
41	22748921	Radiator

Symbol No.	Part No.	Description
42	20746920	Transistor Holder
43	22748922	Barrier
44	20747662	P.C. Board Stay
45	22118030	Radiator
46	22193482	Control P.C. Board
47	22748916	Shield Case
48	22748915	Shield Plate
SCREWS & RINGS		
N1	20795955	Bind Head 3.0 x 6 mm with SW
N2	22701716	Bind Head 3.0 x 14 mm
N3	22701801	Bind Head 4.0 x 8 mm (Black)
N4	22701573	Bind Head 4.0 x 8 mm with WW
N5	72633006	Bind Head Tapping 3.0 x 6 mm
N6	22701802	Bind Head Tapping 3.0 x 8 mm
N7	72633008	Bind Head Tapping 3.0 x 8 mm
N9	22701777	Pan Head Tapping 3.0 x 10 mm
N10	22701813	Flat Head Tapping 3.0 x 6 mm
N11	20795908	Flat Head Tapping 3.0 x 8 mm
N12	74022030	Lock Washer 3.0ϕ
N13	22703553	Special Washer 3.2ϕ
N14	73653000	Nut 3.0ϕ
N15	22705506	Special Rivet
N16	22701677	Pan Head Tapping 3.0 x 6 mm

MEMO

MODEL TI2900

1. SPECIFICATIONS

Type . . . . Infra red wireless remote control

Controls

Power . . . . ON/OFF

Tuner FM . . . . 1 to 6 Channels

AM . . .1 to 6 Channels of MW and LW

Tape . . . . . . REW, PLAY, FF, REC, STOP, PAUSE

Phono . . . . START/STOP

Amp . . . . MUTING, DOWN, UP (VOLUME)

Note:

It is suggested that 2 x Mallory Duracell MN 1500 batteries be used for longer life.

Indicator . . . . Indicator Eye (LED)

Controllable Distance . . . . 7m in 30 deg.

Power Supply . . . . . 3V DC, Size AA (HP7) Battery x 2

Dimensions . . . . 65(W) x 140(H) x 20(D) mm

Accessories . . . . Batteries, Size AA (HP7) x 2

Specifications are subject to change without notice.

2. DISASSEMBLY INSTRUCTIONS

(1) Back panel removal

Remove one screw (A) on the back side of the set as shown in Figure 17 and lift up the back panel.

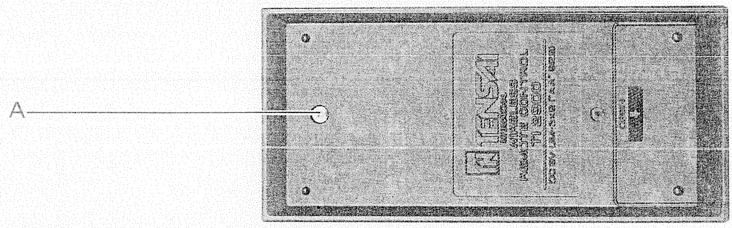
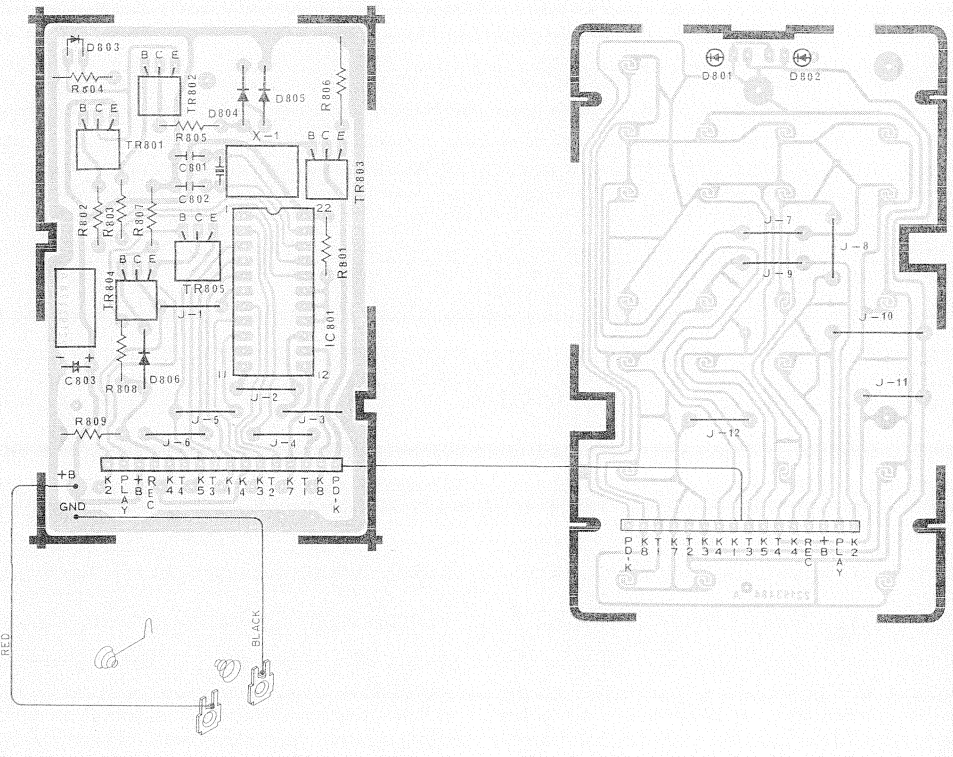


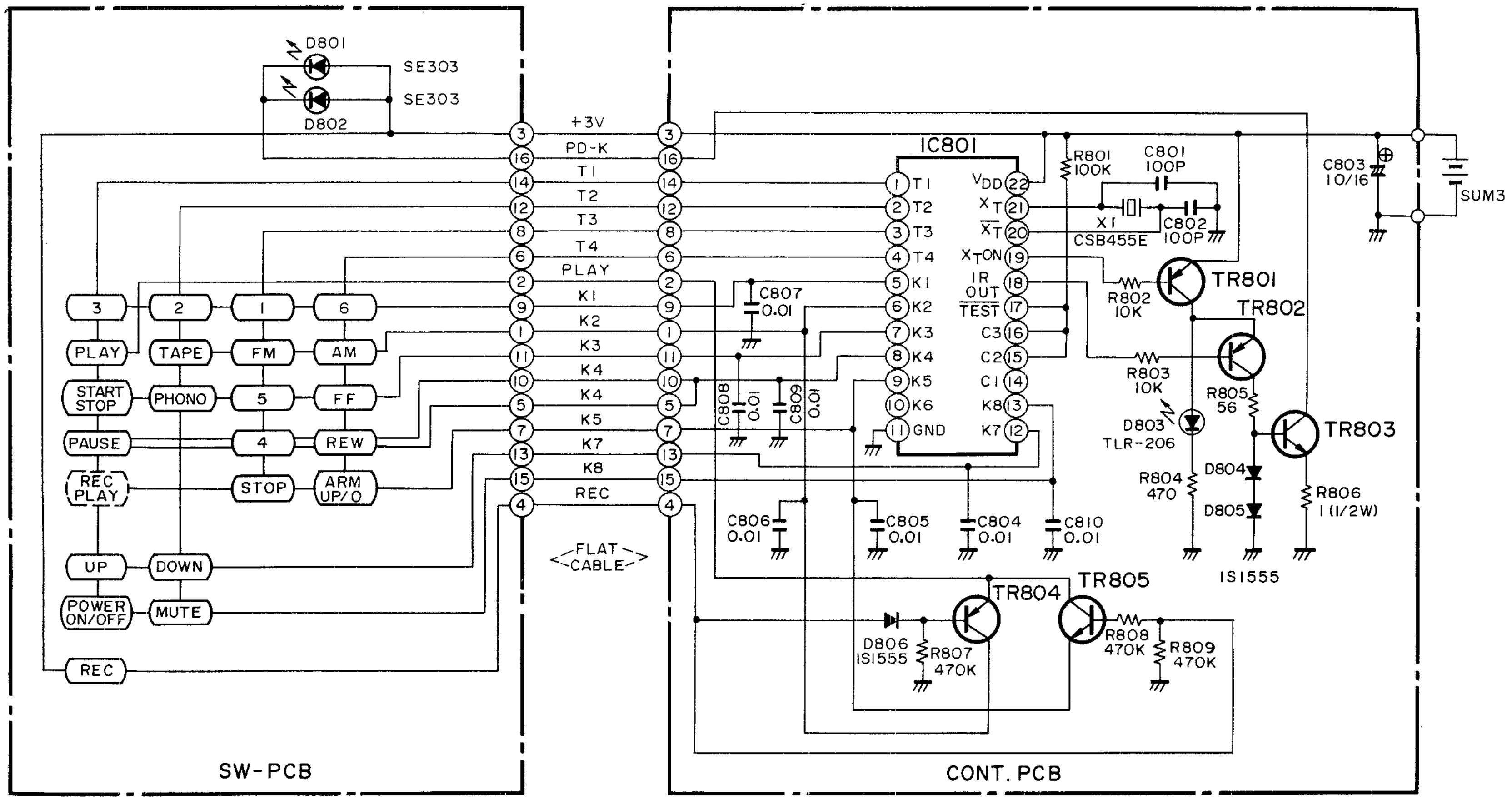
Figure 17

3. PRINTED CIRCUIT BOARDS

TOP VIEW AND WIRING

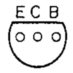

D803
R804
B C E
TR801
TR802
D804
D805
R806
R805
X-1
B C E
C801
C802
TR803
R802
R803
R807
22
R801
TR805
TR804
J-1
IC801
C803
R808
D806
11
12
J-2
J-5
J-3
R809
J-6
J-4
+B
GND
K P + R KT KT KK KT KT K P
2 L B E 44 53 14 32 71 8 D
A C -
Y K
RED
BLACK
D801
D802
J-7
J-8
J-9
J-10
J-11
J-12
P KT KT KK KT KT K R + P K
D 8 1 7 2 3 4 1 3 5 4 4 E B L 2
- C A
K Y

4. SCHEMATIC DIAGRAM

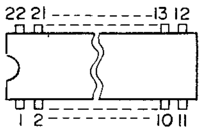

D801
D802
SE303
SE303
+3V
PD-K
T1
T2
T3
T4
PLAY
K1
K2
K3
K4
K4
K5
K7
K8
REC
<-FLAT-> <-CABLE->
3
2
1
6
PLAY
TAPE
FM
AM
START STOP
PHONO
5
FF
PAUSE
4
REW
REC PLAY
STOP
ARM UP/O
UP
DOWN
POWER ON/OFF
MUTE
REC
SW-PCB
IC801
T1
T2
T3
T4
K1
K2
K3
K4
K5
K6
GND
VDD
XT
$\overline{XT}$
XTON
IR OUT
$\overline{TEST}$
C3
C2
C1
K8
K7
R801 100K
C801 100P
X1 CSB455E
C802 100P
C803 10/16
SUM3
C807 0.01
C808 0.01
C809 0.01
C806 0.01
C805 0.01
C804 0.01
C810 0.01
TR801
TR802
TR803
TR804
TR805
R802 10K
R803 10K
R805 56
D803 TLR-206
R804 470
D804
D805
1S1555
R806 1 (1/2W)
D806 1S1555
R807 470K
R808 470K
R809 470K
CONT. PCB

TR801,802	2SA1015	DRIVER
TR803	2SC2120	POWER STAGE
TR804,805	2SC1815	SWITCHING
D801,802	SE303	REMOTE-CONTROL-SIGNAL-OUT
D803	TLR-206	REMOTE-CONTROL-INDICATOR
D804,805	1S1555V	TRANSISTOR-BIAS
D806	1S1555V	SWITCHING

IC801 REMOTE-CONTROL TRANSMITTER



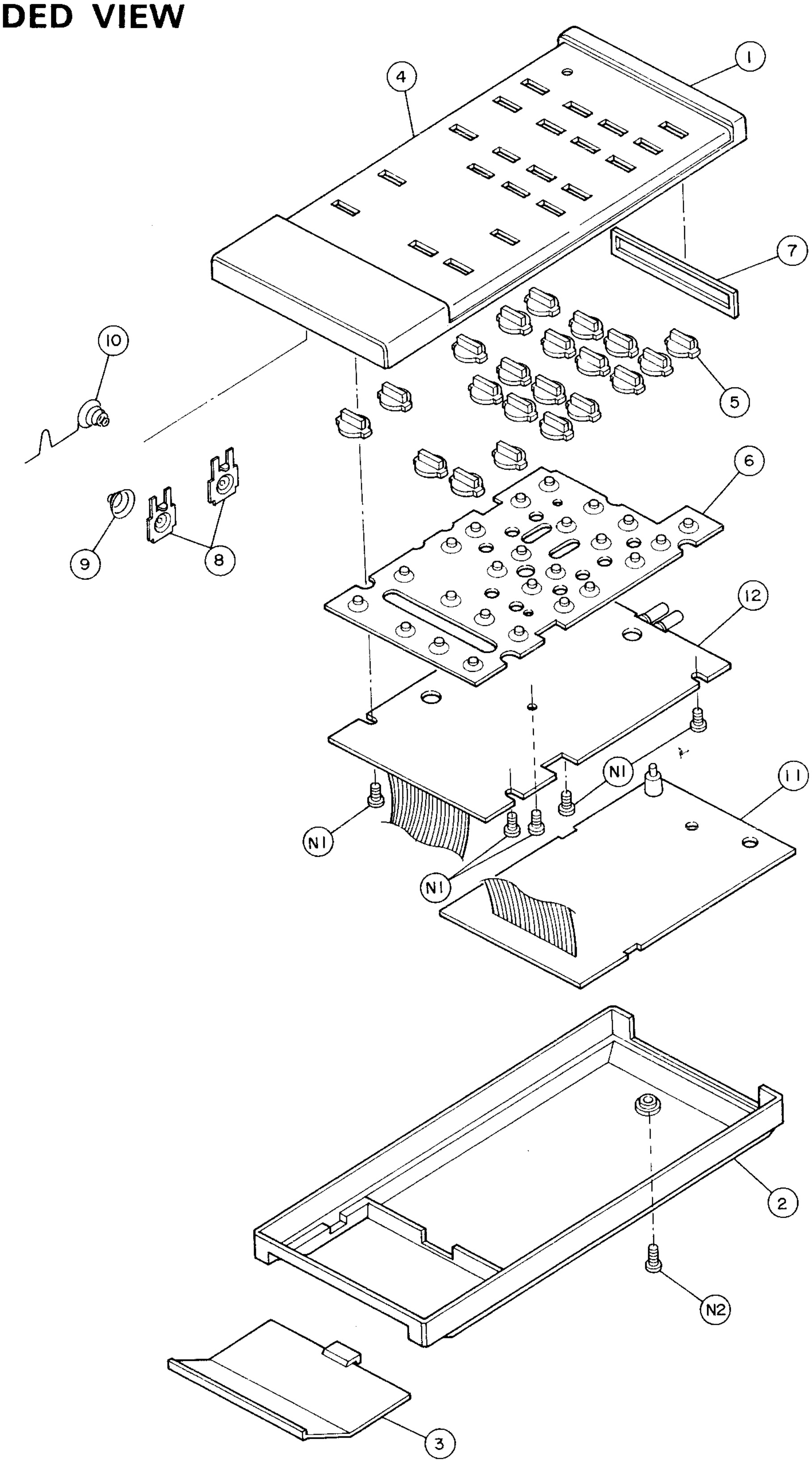
TR801~805


22 21 13 12
1 2 10 11

IC801

5. EXPLODED VIEW AND PARTS LISTS

EXPLODED VIEW


1
4
7
10
5
6
9
8
12
N1
11
N1
N1
2
N2
3

PARTS LIST

ELECTRICAL PARTS

Symbol No.	Part No.	Description
	IC	
IC801	40411320	IC, TC9132P
	TRANSISTORS & DIODES Symbol No. with TR: Transistor Symbol No. with D: Diode	
TR801	36534060	2SA1015-GR
TR802	36534060	2SA1015-GR
TR803	36321240	2SC2120-Y
TR804	36534060	2SA1015-GR
TR805	36317480	2SC1815-BL
D801	22115728	SE303
D802	22115728	SE303
D803	38603120	TLR-206
D804	37246745	1S1555V-TP3
D805	37246745	1S1555V-TP3
D806	37246745	1S1555V-TP3
	CAPACITORS Tolerance: J: ±5%, K: ±10%, Z: +80 to −20%	
C801	22360638	Ceramic 100 PF, J
C802	22360638	Ceramic 100 PF, J
C803	22401050	Tantalum 10 mfd/16WV, K
C804	22342103	Ceramic 0.01 mfd, Z
C805	22342103	Ceramic 0.01 mfd, Z
C806	22342103	Ceramic 0.01 mfd, Z
C807	22342103	Ceramic 0.01 mfd, Z
C808	22342103	Ceramic 0.01 mfd, Z
C809	22342103	Ceramic 0.01 mfd, Z
C810	22342103	Ceramic 0.01 mfd, Z
	RESISTORS All fixed resistors are 1/8W, ±5%, carbon resistor unless otherwise noted.	
R801	22519104	100K ohm
R802	22519103	10K ohm
R803	22519103	10K ohm
R804	22519471	470 ohm
R805	22519560	56 ohm
R806	22547109	1 ohm, 1/2W
R807	22519474	470K ohm
R808	22519474	470K ohm
R809	22519474	470K ohm
	MISCELLANEOUS	
X-1	22153209	Ceramic Resonator

EXPLODED VIEW PARTS LIST

Symbol No.	Part No.	Description
1	20848686	Cabinet-A
2	20848687	Cabinet-B
3	20848685	Battery Cover
4	20836729	Panel
5	20872667	Push Button
6	20744604	Sheet
7	20019695	Filter Plate
8	22725554	Battery Contact-A
9	22725555	Battery Contact-B
10	22725556	Battery Contact-C
11	22193478	Control P.C. Board
12	22193484	Switch P.C. Board
	SCREWS	
N1	72632005	Bind Head Tapping 2.0x5mm
N2	22701840	Bind Head Tapping 2.6x8mm (Black)
	ACCESSORIES	
	76031092	Battery UM3KE
	22954613	Owner's Manual

MODEL TFL2900

1. SPECIFICATIONS

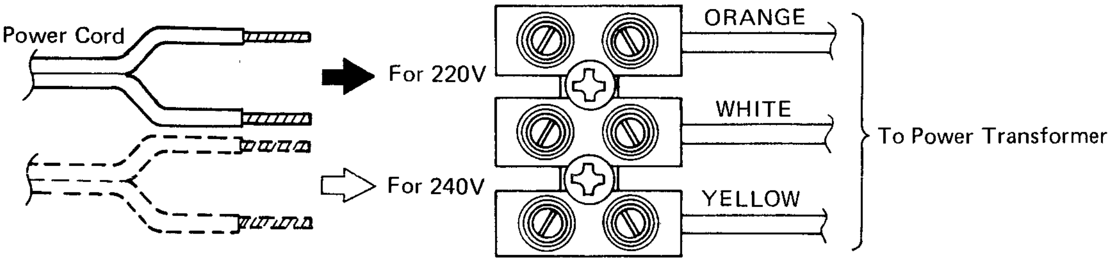
Type	Stereo Cassette Tape Deck with Full Auto Stop Mechanism
Heads	Record/Playback x 1 (AC Bias) Erase x 1 (AC Erase)
Motor	Electric Governor Motor x 1
Wow& Flutter (DIN)	±0.14%
Frequency Response	
NORMAL	30 – 15,000 Hz
CrO_2	30 – 16,000 Hz
METAL	30 – 17,500 Hz
Signal to Noise Ratio	
Dolby NR OFF/ON	58/68 dB
Inputs	
MIC	0.3 mV/10k ohms (Standard Jack x 2)
LINE	60 mV/100k ohms (Phono Socket x 2)
DIN	0.1 mV/<4.7k ohms (5 Pin DIN)
Outputs	
LINE	380 mV/<4.7k ohms (Phono Socket x 2)
PHONES	80 mV/8 ohms (Standard Stereo Jack)
DIN	380 mV/<4.7k ohms (5 Pin DIN)
Fast Forward Time	80 Seconds for C-60 Tape
Level Displays	10 LEDs Display x 1 Pair
Features	Logic Control Mechanism with Feather Touch Operation LED Level Displays *DOLBY NR Switch Metal Tape Position Timer Rec/Playback Switch Recording Mute
Power Supply	∿ 220/240V, 50 Hz
Dimensions	Approx. 430(W) x 109(H) x 250(D) mm
Weight	Approx. 6.5 kg
Accessory	Phono Lead

Specifications are subject to change without notice.

DOLBY SYSTEM

Dolby and double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.

NOTE:
According to the power supply voltage, connect the power cord as shown in below.



2. DISASSEMBLY INSTRUCTIONS

(1) Top cover removal
Remove four screws on the both sides and two screws (A) on the rear of the set as shown in Figure 18 and lift up the top cover.

(2) Bottom cover removal
Remove seven screws (B) from bottom as shown in Figure 20 and lift up the bottom cover.

(3) Front panel removal
Remove two rotary knobs.
Remove nine screws (C) from the both sides and bottom as shown in Figure 19 and 20, and the front panel with mechanism can be removed.

(4) Mechanism removal
Remove the front panel.
Remove two screws (D) as shown in Figure 21, and the mechanism will be removed.

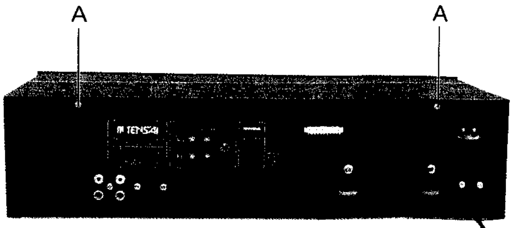


Figure 18

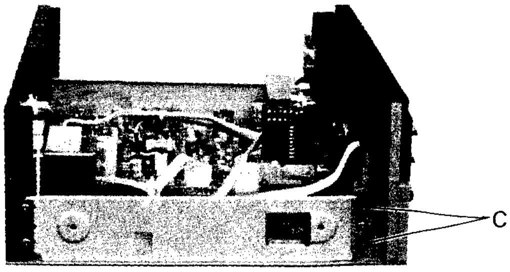


Figure 19

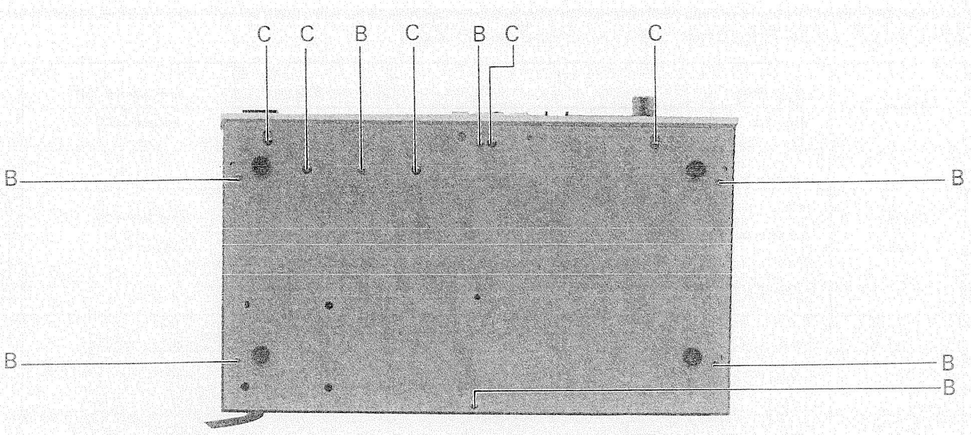

C
C
B
C
B
C
C
B
B
B
B
B

Figure 20

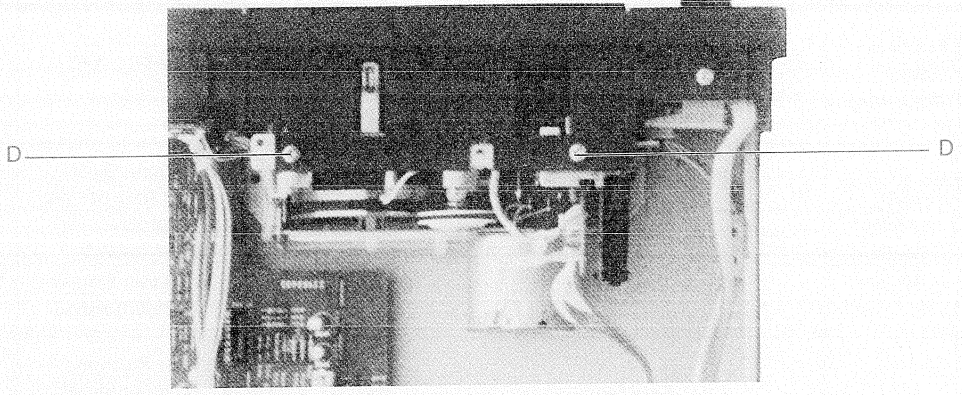


Figure 21

3. ALIGNMENT INSTRUCTIONS

Test Equipments

(1) AF oscillator
(2) VTVM (AC/DC)
(3) Frequency Counter
(4) Test Tape (MTT-111, MTT-114, MTT-212C, AC-512)

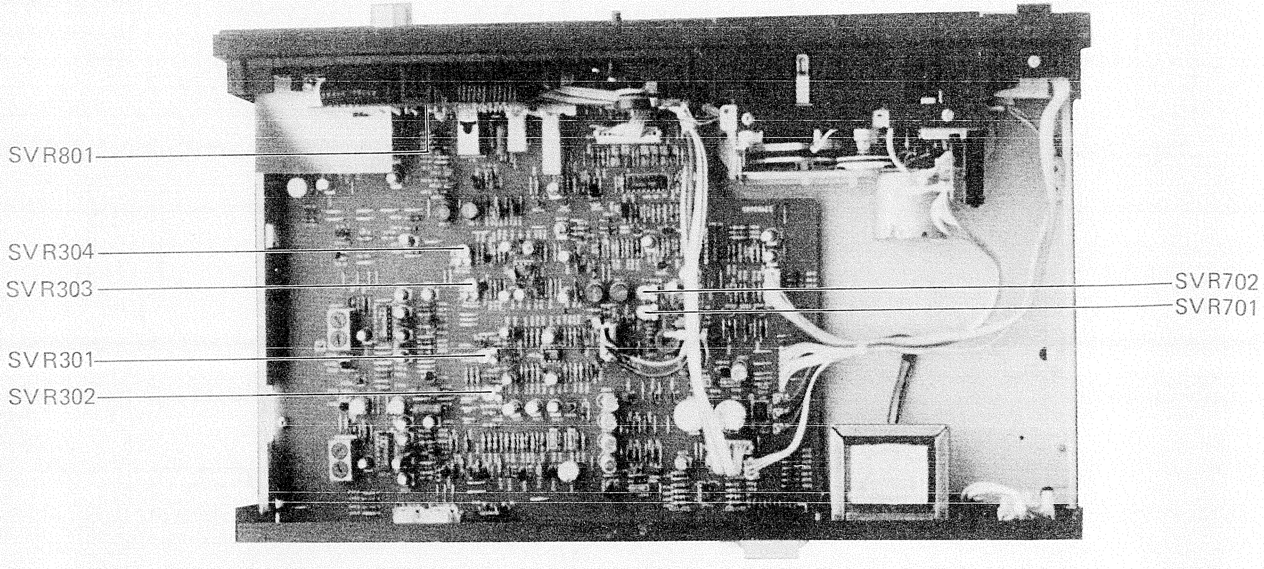
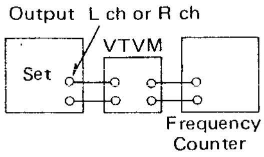
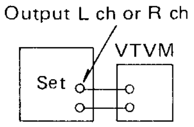
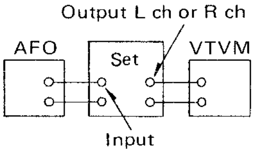

SVR801
SVR304
SVR303
SVR301
SVR302
SVR702
SVR701

Figure 22

ALIGNMENT (For alignment point, see Figure 22.)

Step	Item	Adjusting Points	Performance	Test Point	Test Equipments	Remarks for Adjustment	Connections
1	Tape Speed	Semi-VR on DC motor (See Figure 23)	Test Tape MTT-111 (3000 Hz) Tape Play Back	Right or Left Output	VTVM Frequency Counter	Frequency 3000 Hz	 Output L ch or R ch VTVM Set Frequency Counter
2	Record and Playback Head Azimuth Adjustment	Azimuth Adjusting Screw (See Figure 24)	Test Tape MTT-114 (10 kHz) Tape Play Back	Right and Left Output	VTVM	To Maximum Reading of VTVM Against Lower Output Channel of L ch or R ch	 Output L ch or R ch VTVM Set
3	Playback Gain Adjustment	SVR301 SVR302	Test Tape MTT-212C Tape Play Back	Same as Step 2	VTVM	Output Level 360mV	Same as Step 2
4	Level Display Reading (Meter)	SVR801	Blank Tape Recording and Pause	Same as Step 2	AFO VTVM	Input Signal 1 kHz 245mV a) Output Level to 360mV b) Level Display to 0 Reading	 Output L ch or R ch AFO Set VTVM Input
5	Bias Current Adjustment	SVR701 SVR702	Test Tape AC-512 (CrO_2) Recording and Play Back	Same as Step 2	AFO VTVM	CrO_2 Position a) Input Signal 1 kHz and 10 kHz 24mV b) Output Level Same Level 1 kHz and 10 kHz	Same as Step 4 VR301 Recording and Pause Monitor Output 36mV
6	Recording Current Adjustment	SVR303 SVR304	Test Tape AC-512 Recording and Play Back	Same as Step 2	AFO VTVM	a) Input Signal 1 kHz 245mV b) Output Level to 360mV	Same as Step 4 Monitor Output 360mV

Tape Speed Adjustment

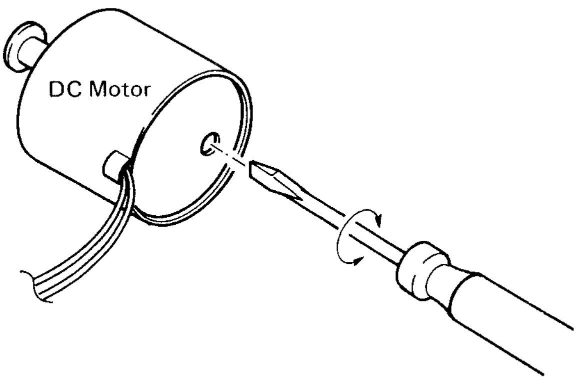


Figure 23

Record/Playback Head Azimuth Adjustment

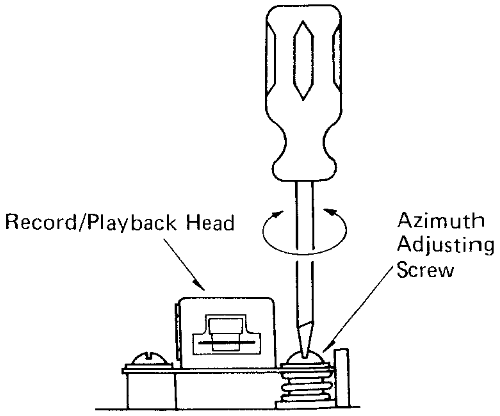
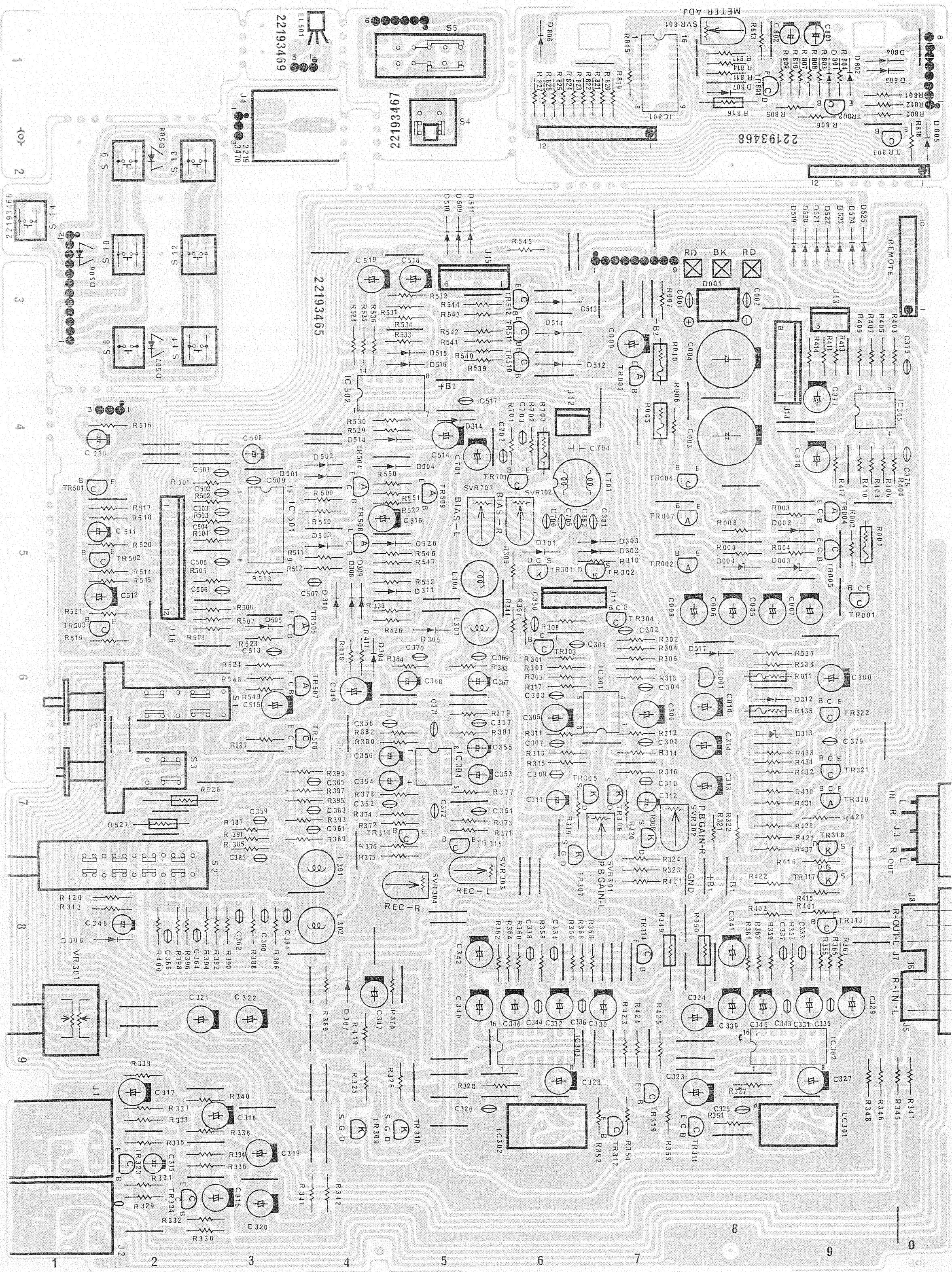

Record/Playback Head
Azimuth Adjusting Screw

Figure 24

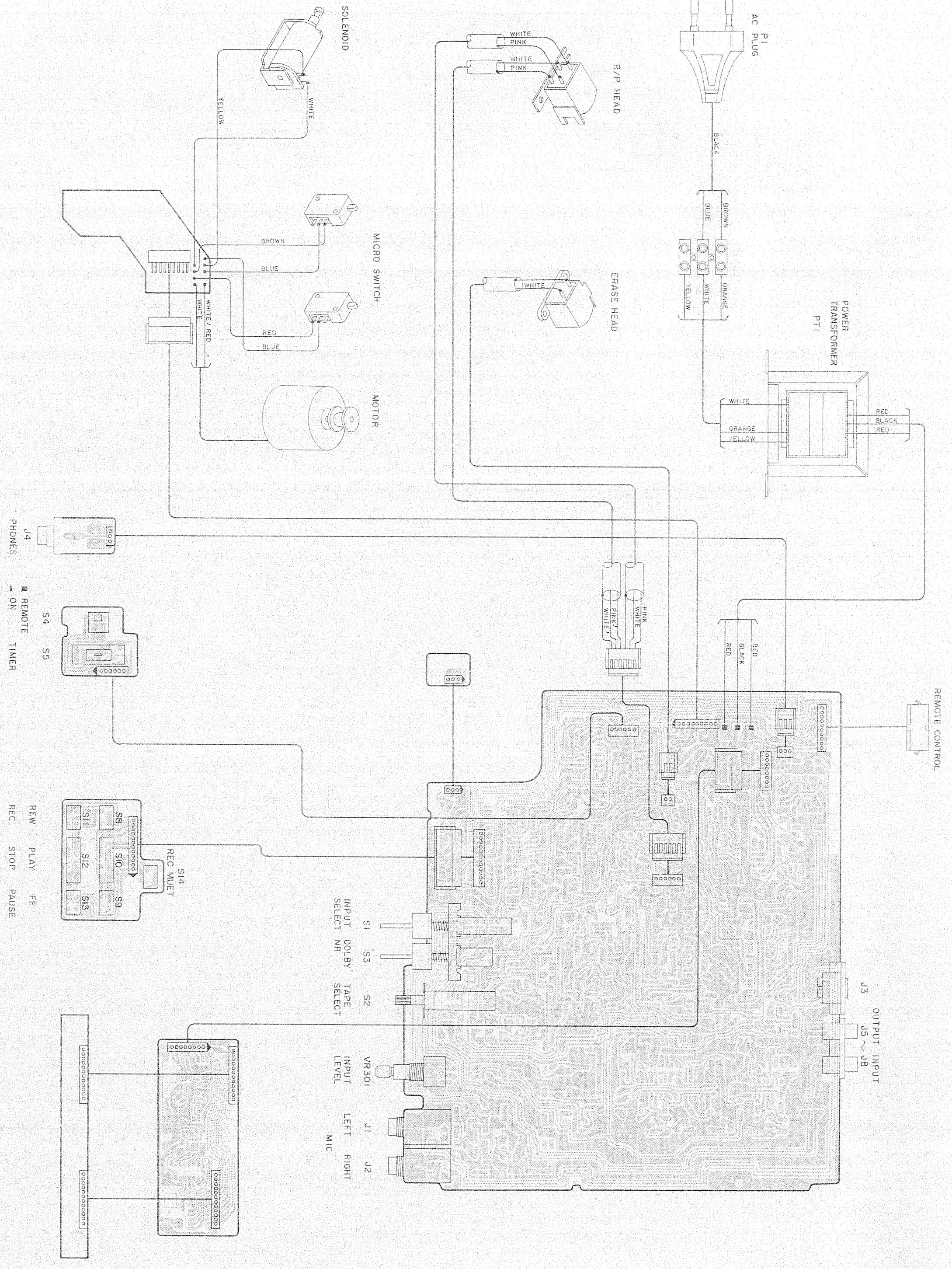
4. PRINTED CIRCUIT BOARDS

TOP VIEW

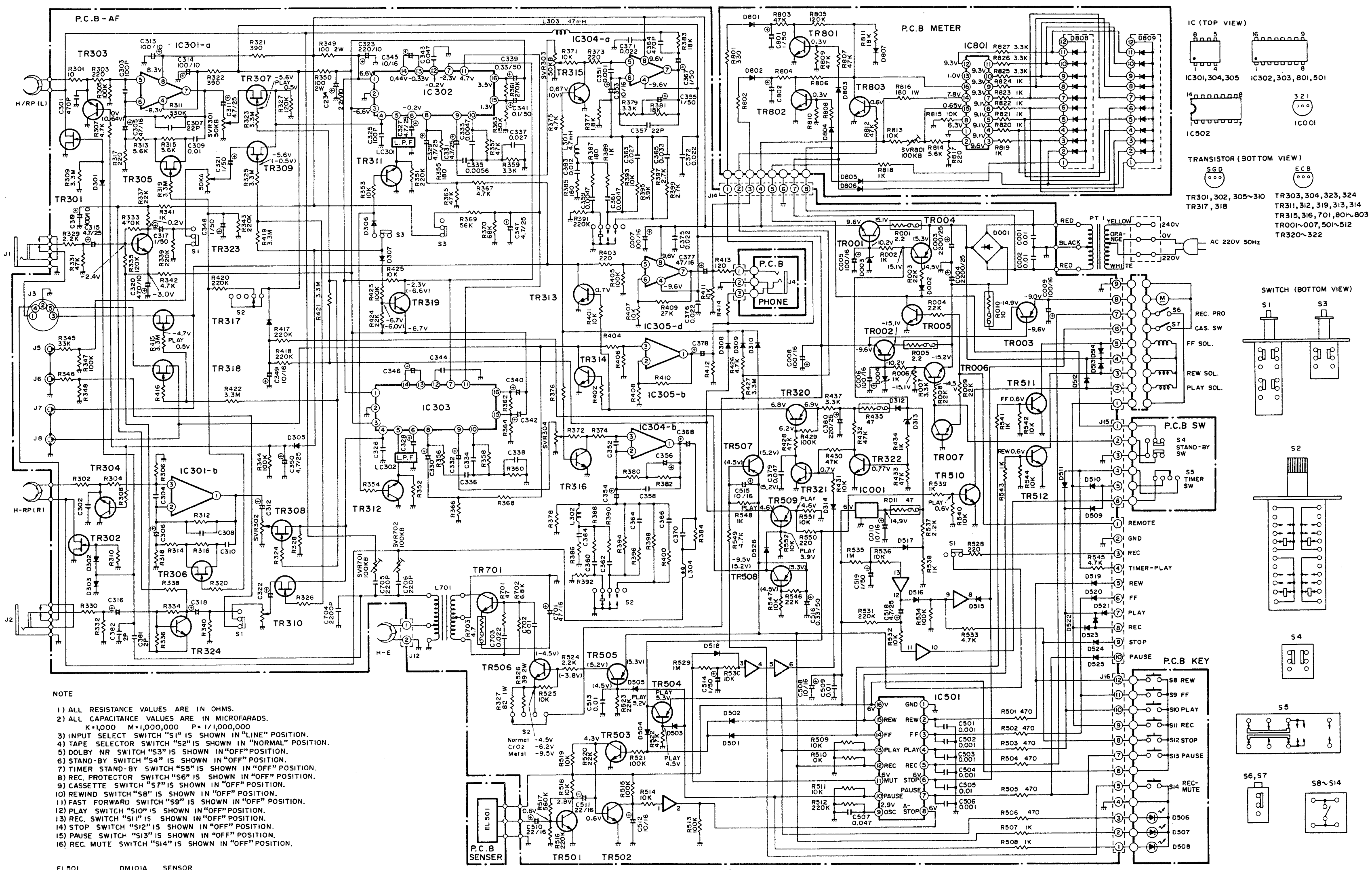


22193469
22193467
22193468
22193466
22193465
22193470
METER ADJ.
SVR801
IC801
IC501
IC502
IC301
IC302
IC303
IC304
IC305
IC001
LC301
LC302
J1
J2
J3
J4
J5
J6
J7
J8
J11
J12
J13
J14
J15
J16
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
EL501
VR301
SVR301
SVR302
SVR303
SVR304
SVR701
SVR702
BIAS-L
BIAS-R
REC-L
REC-R
P.B GAIN-R
P.B GAIN-L
REMOTE
RD
BK
RD
D001
L101
L102
L301
L303
L304
L701
+B1
+B2
GND
R OUT
L IN
R-OUT-L
R-IN-L
1
2
3
4
5
6
7
8
9
0

5. WIRING DIAGRAM


SOLENOID
YELLOW
WHITE
MICRO SWITCH
BROWN
BLUE
RED
BLUE
WHITE/RED
WHITE
MOTOR
R/P HEAD
WHITE
PINK
WHITE
PINK
ERASE HEAD
WHITE
P1
AC PLUG
BLACK
BROWN
BLUE
ORANGE
WHITE
YELLOW
POWER TRANSFORMER
PT1
WHITE
ORANGE
YELLOW
RED
BLACK
RED
J4
PHONES
S4 S5
■ REMOTE
▬ ON TIMER
PINK
WHITE
PINK
WHITE
RED
BLACK
RED
REMOTE CONTROL
S14
REC MUET
S8
S10
S9
S11
S12
S13
REW PLAY FF
REC STOP PAUSE
S1 S3 S2
INPUT SELECT
DOLBY NR
TAPE SELECT
VR301
INPUT LEVEL
J1 J2
LEFT RIGHT
MIC
J3
OUTPUT INPUT
J5～J8

6. SCHEMATIC DIAGRAM


P.C.B-AF
P.C.B METER
P.C.B SW
P.C.B KEY
P.C.B SENSER
P.C.B PHONE
IC301-a
IC301-b
IC302
IC303
IC304-a
IC304-b
IC305-b
IC305-d
IC501
IC801
IC001
H/RP(L)
H-RP(R)
H-E
J1
J2
J3
J5
J6
J7
J8
J12
J14
J15
J16
AC 220V 50Hz
REC PRO
CAS. SW
FF SOL.
REW SOL.
PLAY SOL.
REMOTE
GND
REC
TIMER-PLAY
REW
FF
PLAY
STOP
PAUSE
S4 STAND-BY SW
S5 TIMER SW
S8 REW
S9 FF
S10 PLAY
S11 REC
S12 STOP
S13 PAUSE
S14 REC-MUTE
IC (TOP VIEW)
IC301,304,305
IC302,303,801,501
IC502
IC001
TRANSISTOR (BOTTOM VIEW)
SGD
ECB
TR301,302,305~310 TR317,318
TR303,304,323,324 TR311,312,319,313,314 TR315,316,701,801~803 TR001~007,501~512 TR320~322
SWITCH (BOTTOM VIEW)
S1
S3
S2
S4
S5
S6,S7
S8~S14

NOTE

1) ALL RESISTANCE VALUES ARE IN OHMS.
2) ALL CAPACITANCE VALUES ARE IN MICROFARADS.
K=1,000 M=1,000,000 P=1/1,000,000
3) INPUT SELECT SWITCH "S1" IS SHOWN IN "LINE" POSITION.
4) TAPE SELECTOR SWITCH "S2" IS SHOWN IN "NORMAL" POSITION.
5) DOLBY NR SWITCH "S3" IS SHOWN IN "OFF" POSITION.
6) STAND-BY SWITCH "S4" IS SHOWN IN "OFF" POSITION.
7) TIMER STAND-BY SWITCH "S5" IS SHOWN IN "OFF" POSITION.
8) REC. PROTECTOR SWITCH "S6" IS SHOWN IN "OFF" POSITION.
9) CASSETTE SWITCH "S7" IS SHOWN IN "OFF" POSITION.
10) REWIND SWITCH "S8" IS SHOWN IN "OFF" POSITION.
11) FAST FORWARD SWITCH "S9" IS SHOWN IN "OFF" POSITION.
12) PLAY SWITCH "S10" IS SHOWN IN "OFF" POSITION.
13) REC. SWITCH "S11" IS SHOWN IN "OFF" POSITION.
14) STOP SWITCH "S12" IS SHOWN IN "OFF" POSITION.
15) PAUSE SWITCH "S13" IS SHOWN IN "OFF" POSITION.
16) REC. MUTE SWITCH "S14" IS SHOWN IN "OFF" POSITION.

EL501	DM101A	SENSOR
D301~303	1S1553V	SWITCHING
D304~312,314	1S1555V	SWITCHING
D313	XZ098	SWITCHING
D001	S1WB	RECTIFIER
D002	1S1555V	SWITCHING
D003,004	WZ105	REGURATOR
D512~514	S5277E	FLYWHEEL
D506	LN324WP	PLAY INDICATE
D507	LN224WP	REC INDICATE
D508	LN224WP	PAUSE INDICATE
D501 505 D509 511 D515 526	1S1555V	CONTROL

IC301	NJM4562DD	EQ AMP
IC302, 303	TA7629P	DOLBY NR
IC304	NJM4558DX	REC AMP
IC305	NJM4556D	HEADPHONE AMP
IC501	TC9143P	CONTROL
IC801	TA7612AP	METER DRIVE
IC001	NJM78L05	REGURATOR
TR323, 324	2SC2240	MIC AMP
TR313~316 321~322	2SC1815	MUTING
TR320	2SA1015	MUTING

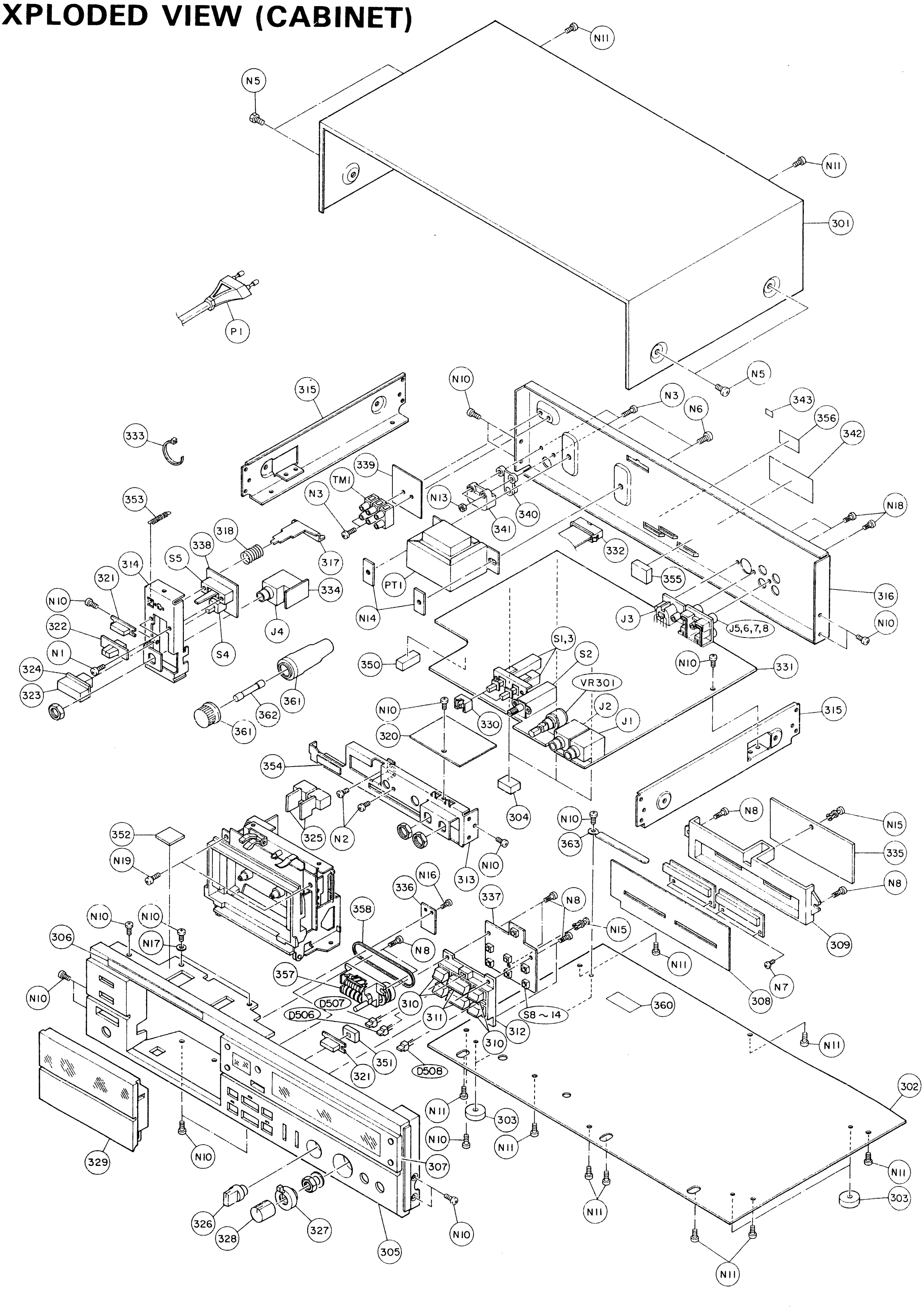
TR001	2SC2236	REGULATOR
TR002	2SA966	REGULATOR
TR003	2SA950	REGULATOR
TR301,302	2SK223	SWITCHING
TR305~310 317,318	2SK246	SWITCHING
TR303,304	2SC2240	SWITCHING
TR311,312 319,321,322	2SC1815	SWITCHING
TR501~503	2SC1815	CONTROL
TR004,007	2SA1015	SWITCHING
TR005,006	2SC1815	SWITCHING

TR504,505 507~509	2SA1015	CONTROL
TR506 510~512	2SC2120	CONTROL

REMARKS
VOLTAGE INDICATE
V : IN STOP
(V): IN RECORDING

7. EXPLODED VIEW AND PARTS LIST

EXPLODED VIEW (CABINET)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N6
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333
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TM1
N3
N13
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341
N18
353
318
338
S5
317
314
321
332
355
N10
334
PT1
322
N14
J3
J5,6,7,8
316
N10
N1
J4
S4
324
323
350
S1,3
S2
N10
331
VR301
J2
J1
361
362
361
N10
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315
354
304
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N2
N10
363
N8
N15
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N8
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N11
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N7
357
D507
D506
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311
S8 ~ 14
308
360
N10
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321
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D508
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303
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328
N10
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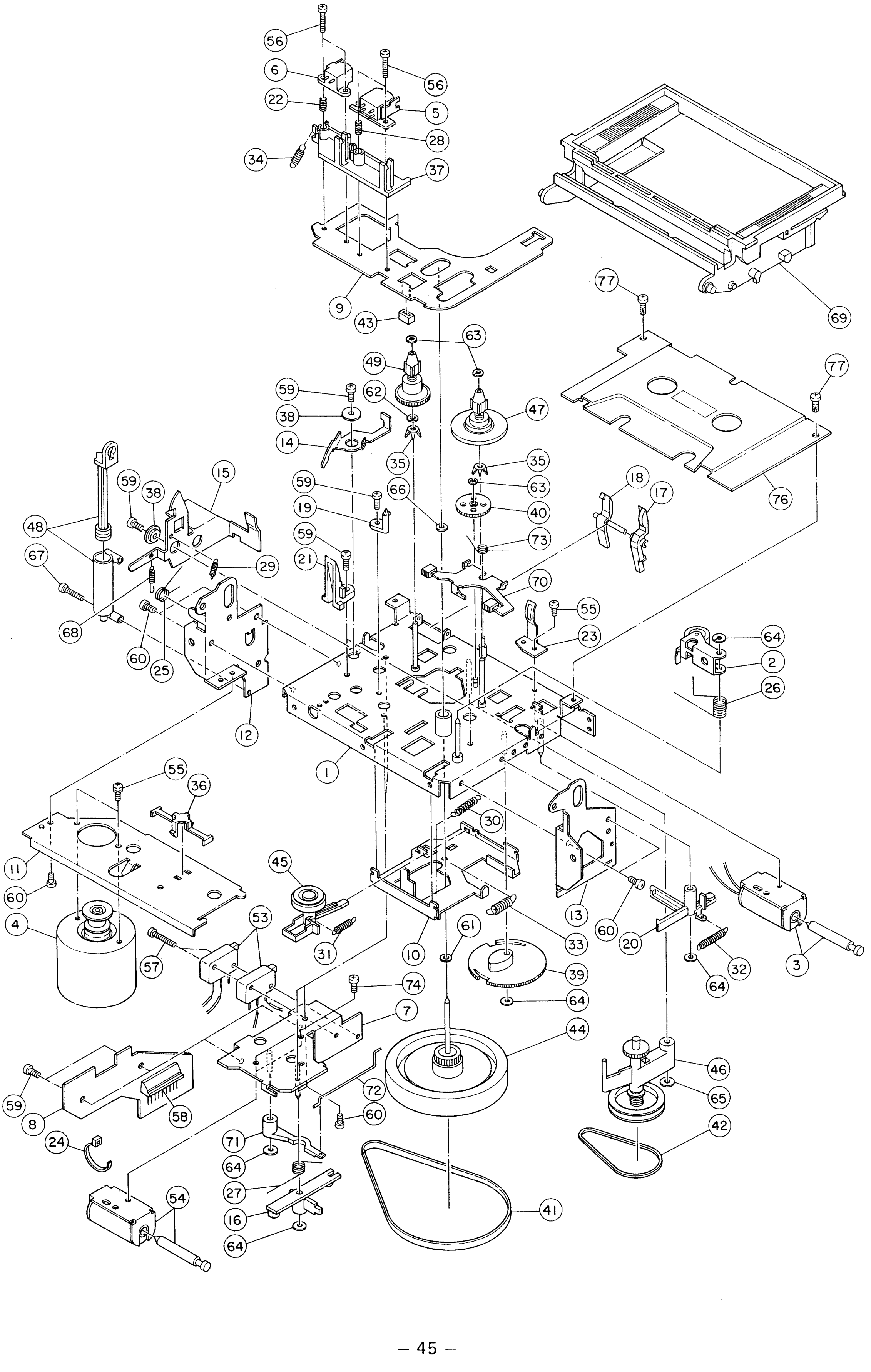
N11

EXPLODED VIEW (MECHANISM)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74
64
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PARTS LIST

ELECTRICAL PARTS

Symbol No.	Part No.	Description
ICs		
IC001	22114991	IC, NJM78L06
IC301	22114979	IC, NJM4562DD
IC302	40356150	IC, TA7629P
IC303	40356150	IC, TA7629P
IC304	22114863	IC, NJM4558DX
IC305	22114865	IC, NJM4556D
IC501	40411430	IC, TC9143P
IC502	22117002	IC, μPD4069BC
IC801	40355210	IC, TA7612AP
TRANSISTORS & DIODES Symbol No. with TR: Transistor Symbol No. with D: Diode		
TR001	36325560	2SC2236-O
TR002	36533220	2SA966-O
TR003	36532920	2SA950-O
TR004	36534060	2SA1015-GR
TR005	36317480	2SC1815-BL
TR006	36317480	2SC1815-BL
TR007	36534060	2SA1015-GR
TR301	22114992	2SK223-E
TR302	22114992	2SK223-E
or		
TR301	22117020	2SK223-F
TR302	22117020	2SK223-F
or		
TR301	22117021	2SK223-G
TR302	22117021	2SK223-G
TR303	36325845	2SC2240-BL
TR304	36325845	2SC2240-BL
TR305	36044630	2SK246-GR
TR306	36044630	2SK246-GR
TR307	36044630	2SK246-GR
TR308	36044630	2SK246-GR
TR309	36044630	2SK246-GR
TR310	36044630	2SK246-GR
TR311	36317460	2SC1815-GR
TR312	36317460	2SC1815-GR
TR313	36317480	2SC1815-BL
TR314	36317480	2SC1815-BL
TR315	36317480	2SC1815-BL
TR316	36317480	2SC1815-BL
TR317	36044630	2SK246-GR
TR318	36044630	2SK246-GR
TR319	36317460	2SC1815-GR
TR320	36534060	2SA1015-GR
TR321	36317460	2SC1815-GR
TR322	36317460	2SC1815-GR
TR323	36325845	2SC2240-BL
TR324	36325845	2SC2240-BL
TR501	36317460	2SC1815-GR
TR502	36317460	2SC1815-GR
TR503	36317460	2SC1815-GR
TR504	36534060	2SA1015-GR
TR505	36534060	2SA1015-GR
TR506	36321240	2SC2120-Y
TR507	36534060	2SA1015-GR
TR508	36534060	2SA1015-GR
TR509	36534060	2SA1015-GR
TR510	36321240	2SC2120-Y
TR511	36321240	2SC2120-Y
TR512	36321240	2SC2120-Y
TR701	36325560	2SC2236-O
TR801	36317460	2SC1815-GR
TR802	36317460	2SC1815-GR
TR803	36317460	2SC1815-GR
D001	22115631	S1WB10
D002	37246745	1S1555V-TP3
D003	22115692	WZ105
D004	22115692	WZ105
D301	37246601	1S1553V
D302	37246601	1S1553V
D303	37246601	1S1553V
D304	37246745	1S1555V-TP3
D305	37246745	1S1555V-TP3
D306	37246745	1S1555V-TP3
D307	37246745	1S1555V-TP3
D308	37246745	1S1555V-TP3
D309	37246745	1S1555V-TP3
D310	37246745	1S1555V-TP3
D312	37246745	1S1555V-TP3
D313	22115721	XZ098
D314	37246745	1S1555V-TP3
D501	37246745	1S1555V-TP3
D502	37246745	1S1555V-TP3
D503	37246745	1S1555V-TP3
D504	37246745	1S1555V-TP3

Symbol No.	Part No.	Description
D505	37246745	1S1555V-TP3
D506	22115751	LN324WP
D507	22115720	LN224WP
D508	22115720	LN224WP
D509	37246745	1S1555V-TP3
D510	37246745	1S1555V-TP3
D511	37246745	1S1555V-TP3
D512	37978380	S5277B
D513	37978380	S5277B
D514	37978380	S5277B
D515	37246745	1S1555V-TP3
D516	37246745	1S1555V-TP3
D517	37246745	1S1555V-TP3
D518	37246745	1S1555V-TP3
D519	37246745	1S1555V-TP3
D520	37246745	1S1555V-TP3
D521	37246745	1S1555V-TP3
D522	37246745	1S1555V-TP3
D523	37246745	1S1555V-TP3
D524	37246745	1S1555V-TP3
D525	37246745	1S1555V-TP3
D526	37246745	1S1555V-TP3
D801	22115715	20A90S
D802	22115715	20A90S
D803	37246745	1S1555V-TP3
D804	37246745	1S1555V-TP3
D805	37246745	1S1555V-TP3
D806	37246745	1S1555V-TP3
D807	37246745	1S1555V-TP3
D808	38636010	TLM8101
D809	38636010	TLM8101

CAPACITORS

Tolerance: D: ±0.5PF, J: ±5%, K: ±10%, M: ±20%
P: +100 to –0%, Z: +80 to –20%, G: ±2%

Symbol No.	Part No.	Description
C001	22342103	Ceramic 0.01 mfd, Z
C002	22342103	Ceramic 0.01 mfd, Z
C003	22446222	Electrolytic 2200 mfd/25WV
C004	22446222	Electrolytic 2200 mfd/25WV
C005	22445101	Electrolytic 100 mfd/16WV
C006	22445101	Electrolytic 100 mfd/16WV
C007	22445101	Electrolytic 100 mfd/16WV
C008	22445101	Electrolytic 100 mfd/16WV
C009	22445101	Electrolytic 100 mfd/16WV
C010	22445100	Electrolytic 10 mfd/16WV
C301	22361471	Ceramic 470 PF, J
C302	22361471	Ceramic 470 PF, J
C303	22361101	Ceramic 100 PF, J
C304	22361101	Ceramic 100 PF, J
C305	22445470	Electrolytic 47 mfd/16WV
C306	22445470	Electrolytic 47 mfd/16WV
C307	22361220	Ceramic 22 PF, J
C308	22361220	Ceramic 22 PF, J
C309	22371103	Mylar 0.01 mfd, J
C310	22371103	Mylar 0.01 mfd, J
C311	22446479	Electrolytic 4.7 mfd/25WV
C312	22446479	Electrolytic 4.7 mfd/25WV
C313	22443101	Electrolytic 100 mfd/10WV
C314	22443101	Electrolytic 100 mfd/10WV
C315	22440396	Electrolytic 4.7 mfd/25WV
C316	22440396	Electrolytic 4.7 mfd/25WV
C317	22448109	Electrolytic 1 mfd/50WV
C318	22448109	Electrolytic 1 mfd/50WV
C319	22443101	Electrolytic 100 mfd/10WV
C320	22443471	Electrolytic 470 mfd/10WV
C321	22448109	Electrolytic 1 mfd/50WV
C322	22448109	Electrolytic 1 mfd/50WV
C323	22443221	Electrolytic 220 mfd/10WV
C324	22443221	Electrolytic 220 mfd/10WV
C325	22361101	Ceramic 100 PF, J
C326	22361101	Ceramic 100 PF, J
C327	22446479	Electrolytic 4.7 mfd/25WV
C328	22446479	Electrolytic 4.7 mfd/25WV
C329	22446479	Electrolytic 4.7 mfd/25WV
C330	22446479	Electrolytic 4.7 mfd/25WV
C331	22446479	Electrolytic 4.7 mfd/25WV
C332	22446479	Electrolytic 4.7 mfd/25WV
C333	22371472	Mylar 0.0047 mfd, J
C334	22371472	Mylar 0.0047 mfd, J
C335	22371562	Mylar 0.0056 mfd, J
C336	22371562	Mylar 0.0056 mfd, J
C337	22371273	Mylar 0.027 mfd, J
C338	22371273	Mylar 0.027 mfd, J
C339	22448338	Electrolytic 0.33 mfd/50WV
C340	22448338	Electrolytic 0.33 mfd/50WV
C341	22448108	Electrolytic 0.1 mfd/50WV
C342	22448108	Electrolytic 0.1 mfd/50WV
C343	22371473	Mylar 0.047 mfd, J
C344	22371473	Mylar 0.047 mfd, J
C345	22445100	Electrolytic 10 mfd/16WV
C346	22445100	Electrolytic 10 mfd/16WV
C347	22446479	Electrolytic 4.7 mfd/25WV
C348	22448109	Electrolytic 1 mfd/50WV
C349	22445100	Electrolytic 10 mfd/16WV
C350	22447479	Electrolytic 4.7 mfd/35WV
C351	22343102	Ceramic 0.001 mfd, M
C352	22343102	Ceramic 0.001 mfd, M
C353	22445100	Electrolytic 10 mfd/16WV
C354	22445100	Electrolytic 10 mfd/16WV

Symbol No.	Part No.	Description
C355	22448109	Electrolytic 1 mfd/50WV
C356	22448109	Electrolytic 1 mfd/50WV
C357	22361220	Ceramic 22 PF, J
C358	22361220	Ceramic 22 PF, J
C359	22371472	Mylar 0.0047 mfd, J
C360	22371472	Mylar 0.0047 mfd, J
C361	22371472	Mylar 0.0047 mfd, J
C362	22371472	Mylar 0.0047 mfd, J
C363	22371273	Mylar 0.027 mfd, J
C364	22371273	Mylar 0.027 mfd, J
C365	22371333	Mylar 0.033 mfd, J
C366	22371333	Mylar 0.033 mfd, J
C367	22448109	Electrolytic 1 mfd/50WV
C368	22448109	Electrolytic 1 mfd/50WV
C369	22361471	Ceramic 470 PF, J
C370	22361471	Ceramic 470 PF, J
C371	22342223	Ceramic 0.022 mfd, Z
C372	22342223	Ceramic 0.022 mfd, Z
C375	22342223	Ceramic 0.022 mfd, Z
C376	22342223	Ceramic 0.022 mfd, Z
C377	22445470	Electrolytic 47 mfd/16WV
C378	22445470	Electrolytic 47 mfd/16WV
C379	22342473	Ceramic 0.047 mfd, Z
C380	22446221	Electrolytic 220 mfd/25WV
C381	22361209	Ceramic 2 pF, D
C382	22361209	Ceramic 2 pF, D
C383	22371123	Mylar 0.012 mfd, J
C384	22371123	Mylar 0.012 mfd, J
C501	22343102	Ceramic 0.001 mfd, M
C502	22343102	Ceramic 0.001 mfd, M
C503	22343102	Ceramic 0.001 mfd, M
C504	22343102	Ceramic 0.001 mfd, M
C505	22342103	Ceramic 0.01 mfd, Z
C506	22343102	Ceramic 0.001 mfd, M
C507	22371473	Mylar 0.047 mfd, J
C508	22445100	Electrolytic 10 mfd/16WV
C509	22342103	Ceramic 0.01 mfd, Z
C510	22445220	Electrolytic 22 mfd/16WV
C511	22445220	Electrolytic 22 mfd/16WV
C512	22445100	Electrolytic 10 mfd/16WV
C513	22342103	Ceramic 0.01 mfd, Z
C514	22448109	Electrolytic 1 mfd/50WV
C515	22445100	Electrolytic 10 mfd/16WV
C516	22448338	Electrolytic 0.33 mfd/50WV
C517	22342103	Ceramic 0.01 mfd, Z
C518	22446479	Electrolytic 4.7 mfd/25WV
C519	22448109	Electrolytic 1 mfd/50WV
C701	22445470	Electrolytic 47 mfd/16WV
C702	22371103	Mylar 0.01 mfd, J
C703	22371223	Mylar 0.022 mfd, J
C704	22321221	Polypropylene 2200 PF, J

Symbol No.	Part No.	Description
C705	22361221	Ceramic 220 PF, J
C706	22361221	Ceramic 220 PF, J
C801	22448109	Electrolytic 1 mfd/50WV
C802	22448109	Electrolytic 1 mfd/50WV

RESISTORS

All fixed resistor are 1/8W, ±5%, carbon film unless otherwise noted.

Tolerance: G: ±2%, J: ±5%, K: ±10%

Symbol No.	Part No.	Description
R001	22500313	Fusible 2.2 ohm, 1/4W, J
R002	22519102	1K ohm
R003	22519223	22K ohm
R004	22519223	22K ohm
R005	22500313	Fusible 2.2 ohm, 1/4W, J
R006	22519102	1K ohm
R007	22519332	3.3K ohm
R008	22519223	22K ohm
R009	22519223	22K ohm
R010	22500314	Fusible 10 ohm, 1/4W, J
R011	22500246	Fusible 47 ohm, 1/4W, J
R301	22519100	10 ohm
R302	22519100	10 ohm
R303	22519221	220 ohm
R304	22519221	220 ohm
R305	22519104	100K ohm
R306	22519104	100K ohm
R307	22519472	4.7K ohm
R308	22519472	4.7K ohm
R309	22519335	3.3M ohm
R310	22519335	3.3M ohm
R311	22519334	330K ohm
R312	22519334	330K ohm
R313	22519562	5.6K ohm
R314	22519562	5.6K ohm
R315	22519562	5.6K ohm
R316	22519562	5.6K ohm
R317	22519221	220 ohm
R318	22519221	220 ohm
R319	22519335	3.3M ohm
R320	22519335	3.3M ohm
R321	22519391	390 ohm
R322	22519391	390 ohm
R323	22519335	3.3M ohm
R324	22519335	3.3M ohm
R325	22519335	3.3M ohm
R326	22519335	3.3M ohm

Symbol No.	Part No.	Description
R327	22519124	120K ohm
R328	22519124	120K ohm
R329	22519222	2.2K ohm
R330	22519222	2.2K ohm
R331	22519473	47K ohm
R332	22519473	47K ohm
R333	22519474	470K ohm
R334	22519474	470K ohm
R335	22519124	120K ohm
R336	22519124	120K ohm
R337	22519223	22K ohm
R338	22519223	22K ohm
R339	22519224	220K ohm
R340	22519224	220K ohm
R341	22519102	1K ohm
R342	22519472	4.7K ohm
R343	22519224	220K ohm
R344	22519104	100K ohm
R345	22519333	33K ohm
R346	22519333	33K ohm
R347	22519104	100K ohm
R348	22519104	100K ohm
R349	22573101	Metal Oxide 100 ohm, 2W
R350	22573101	Metal Oxide 100 ohm, 2W
R351	22519224	220K ohm
R352	22519224	220K ohm
R353	22519103	10K ohm
R354	22519103	10K ohm
R355	22519181	180 ohm
R356	22519181	180 ohm
R357	22519473	47K ohm
R358	22519473	47K ohm
R359	22519332	3.3K ohm
R360	22519332	3.3K ohm
R361	22519274	270K ohm
R362	22519274	270K ohm
R363	22519154	150K ohm
R364	22519154	150K ohm
R365	22519473	47K ohm
R366	22519473	47K ohm
R367	22519472	4.7K ohm
R368	22519472	4.7K ohm
R369	22519563	56K ohm
R370	22519683	68K ohm
R371	22519103	10K ohm
R372	22519103	10K ohm
R373	22519221	220 ohm
R374	22519221	220 ohm
R375	22519472	4.7K ohm
R376	22519472	4.7K ohm
R377	22519182	1.8K ohm
R378	22519182	1.8K ohm
R379	22519332	3.3K ohm
R380	22519332	3.3K ohm

Symbol No.	Part No.	Description
R381	22519183	18K ohm
R382	22519183	18K ohm
R383	22519183	18K ohm
R384	22519183	18K ohm
R385	22519181	180 ohm
R386	22519181	180 ohm
R387	22519181	180 ohm
R388	22519181	180 ohm
R389	22519102	1K ohm
R390	22519102	1K ohm
R391	22519224	220K ohm
R392	22519224	220K ohm
R393	22519103	10K ohm
R394	22519103	10K ohm
R395	22519392	3.9K ohm
R396	22519392	3.9K ohm
R397	22519272	2.7K ohm
R398	22519272	2.7K ohm
R399	22519272	2.7K ohm
R400	22519272	2.7K ohm
R401	22519103	10K ohm
R402	22519103	10K ohm
R403	22519221	220 ohm
R404	22519221	220 ohm
R405	22519104	100K ohm
R406	22519104	100K ohm
R407	22519103	10K ohm
R408	22519103	10K ohm
R409	22519273	27K ohm
R410	22519273	27K ohm
R411	22519103	10K ohm
R412	22519103	10K ohm
R413	22519121	120 ohm
R414	22519121	120 ohm
R415	22519335	3.3M ohm
R416	22519335	3.3M ohm
R417	22519224	220K ohm
R418	22519224	220K ohm
R419	22519335	3.3M ohm
R420	22519224	220K ohm
R421	22519335	3.3M ohm
R422	22519335	3.3M ohm
R423	22519104	100K ohm
R424	22519223	22K ohm
R425	22519103	10K ohm
R426	22519472	4.7K ohm
R427	22519335	3.3M ohm
R428	22519473	47K ohm
R429	22519104	100K ohm
R430	22519473	47K ohm
R431	22519103	10K ohm
R432	22519473	47K ohm
R433	22519473	47K ohm

Symbol No.	Part No.	Description
R434	22519102	1K ohm
R435	22500246	Fusible 47 ohm, 1/4W, J
R437	22519332	3.3K ohm
R501	22519471	470 ohm
R502	22519471	470 ohm
R503	22519471	470 ohm
R504	22519471	470 ohm
R505	22519471	470 ohm
R506	22519471	470 ohm
R507	22519102	1K ohm
R508	22519102	1K ohm
R509	22519103	10K ohm
R510	22519103	10K ohm
R511	22519103	10K ohm
R512	22519224	220K ohm
R513	22519104	100K ohm
R514	22519103	10K ohm
R515	22519104	100K ohm
R516	22519224	220K ohm
R517	22519564	560K ohm
R518	22519103	10K ohm
R519	22519103	10K ohm
R520	22519223	22K ohm
R521	22519104	100K ohm
R522	22519473	47K ohm
R523	22519223	22K ohm
R524	22519222	2.2K ohm
R525	22519103	10K ohm
R526	22573390	Metal Oxide 39 ohm, 2W
R527	22571820	Metal Oxide 82 ohm, 1W
R528	22519221	220 ohm
R529	22519105	1M ohm
R530	22519103	10K ohm
R531	22519224	220K ohm
R532	22519103	10K ohm
R533	22519472	4.7K ohm
R534	22519104	100K ohm
R535	22519105	1M ohm
R536	22519103	10K ohm
R537	22519222	2.2K ohm
R538	22519102	1K ohm
R539	22519102	1K ohm
R540	22519103	10K ohm
R541	22519102	1K ohm
R542	22519103	10K ohm
R543	22519102	1K ohm
R544	22519103	10K ohm
R545	22519472	4.7K ohm
R546	22519223	22K ohm
R547	22519103	10K ohm
R548	22519102	1K ohm
R549	22519472	4.7K ohm
R550	22519221	220 ohm

Symbol No.	Part No.	Description
R551	22519103	10K ohm
R552	22519103	10K ohm
R701	22519470	47 ohm
R702	22519682	6.8K ohm
R703	22500316	Fusible 4.7 ohm, 1/4W, J
R801	22519331	330 ohm
R802	22519331	330 ohm
R803	22519473	47K ohm
R804	22519473	47K ohm
R805	22519124	120K ohm
R806	22519124	120K ohm
R807	22519473	47K ohm
R808	22519473	47K ohm
R809	22519473	47K ohm
R810	22519473	47K ohm
R811	22519183	18K ohm
R812	22519473	47K ohm
R813	22519103	10K ohm
R814	22519562	5.6K ohm
R815	22519103	10K ohm
R816	22571181	Metal Oxide 180 ohm, 1W
R817	22519221	220 ohm
R818	22519102	1K ohm
R819	22519102	1K ohm
R820	22519102	1K ohm
R821	22519102	1K ohm
R822	22519102	1K ohm
R823	22519102	1K ohm
R824	22519102	1K ohm
R825	22519332	3.3K ohm
R826	22519332	3.3K ohm
R827	22519332	3.3K ohm
SVR301	22658615	Semi-fixed 50K ohm
SVR302	22658615	Semi-fixed 50K ohm
SVR303	22658615	Semi-fixed 50K ohm
SVR304	22658615	Semi-fixed 50K ohm
SVR701	22658617	Semi-fixed 100K ohm
SVR702	22658617	Semi-fixed 100K ohm
SVR801	22658617	Semi-fixed 100K ohm
VR301	22655216	Variable 50K ohm

Symbol No.	Part No.	Description
MISCELLANEOUS		
EL501	22110014	DM101A Magnet Field Resistor
J1	22163824	Jack 6.5ϕ Microphone
J2	22163824	Jack 6.5ϕ Microphone
J3	22167910	DIN5P Socket
J4	22163719	Jack 6.5ϕ Headphone
J5 ∿ J8	22163901	US4P Jack
L301	22211254	Choke Coil, AF
L302	22211254	Choke Coil, AF
L303	22211277	Choke Coil, AF
L304	22211277	Choke Coil, AF
L701	22215116	OSC Coil, AF
LC301	22135052	LC PEC
LC302	22135052	LC PEC
P1	22176632	Power Cord E2
PT1	22224608	Power Transformer
S1	22190034	Push Switch
S2	22190037	Rotary Switch
S3	22190034	Push Switch
S4	22190035	Push Switch (Power)
S5	22190016	Slide Switch
S8	22190036	Key Switch
S9	22190036	Key Switch
S10	22190036	Key Switch
S11	22190036	Key Switch
S12	22190036	Key Switch
S13	22190036	Key Switch
S14	22190036	Key Switch
TM1	22162368	B3P Terminal

EXPLODED VIEW PARTS LIST

Symbol No.	Part No.	Description
CABINET		
301	25821764	Cabinet
302	20848691	Bottom Cabinet
303	20842653	Foot
304	22758526	Cushion
305	25829700	Front Panel
306	22865846	Name Plate
307	25822847	Meter Cover
308	25731944	Meter Plate
309	25846924	Meter Holder
310	25826815	Push Button
311	25826816	Push Button
312	25846925	Button Holder
313	25865825	Front Chassis
314	25743775	Bracket
315	25865826	Side Chassis
316	25865824	Back Chassis
317	25731943	Eject Plate
318	22776705	Push Spring
320	22748920	Shield Plate
321	25826814	Push Button
322	25826813	Slide Knob
323	20874701	Push Button
324	25846926	Button Holder
325	20874700	Push Button
326	25826810	Select Knob
327	25826811	Volume Knob, L
328	25826812	Volume Knob, R
329	25822848	Cassette Cover
330	20743991	Button Guide
331	22193465	AF P.C. Board
332	22167961	10P Socket Cord
333	20975612	Band N
334	22193470	Headphone P.C. Board
335	22193468	Meter P.C. Board
336	22193469	Senser P.C. Board
337	22193466	Key Switch P.C. Board
338	22193467	Switch P.C. Board
339	22748917	Barrier
340	22754791	Cord Clamper
341	22184183	Cord Clamper
342	22867816	Main Label
343	22906641	Voltage Label
350	22758555	Rubber Cushion
351	22933625	Cushion
352	22758556	Rubber Cushion
353	22776718	Pull Spring
354	22758553	Rubber Cushion
355	22758554	Rubber Cushion
356	22956847	Attention Label

Symbol No.	Part No.	Description
357	25873652	Counter
358	25755722	Belt Q
360	22906684	Fuse Label
361	22755622	Fuse Holder
362	22144444	Fuse-0.2S-T
363	22755623	Clamper Lug
SCREWS & RINGS		
N1	70432604	Bind Head 2.6 x 4mm
N2	70433006	Bind Head 3.0 x 6mm
N3	70433014	Bind Head 3.0 x 14mm
N5	22701801	Bind Head 4.0 x 8mm (Black)
N6	70434008	Bind Head 4.0 x 8mm
N7	72632006	Bind Head Tapping 2.0 x 6mm
N8	72632608	Bind Head Tapping 2.6 x 8mm
N10	22701782	Bind Head Tap Tight 3.0 x 6mm
N11	22701784	Bind Head Tap Tight 3.0 x 8mm
N13	73653000	Nut 3.0φ
N14	20021748	Special Nut
N15	22705506	Special Rivet
N16	72632610	Bind Head Tapping 2.6 x 10mm
N17	74001030	Washer 3.0φ
N18	22701605	Pan Head Tapping 3.0 x 8mm
N19	22701783	Bind Head Tap Tight 3.0 x 6mm
MECHANISM		
1	F011-132	Chassis Assembly
2	F014-053	Pinch Roller Assembly
3	PKA16108	Solenoid
4	F064-093	Motor
5	FU176-11	Record/Playback Head
6	FU192-11	Erase Head
7	F214-015	Solenoid Bracket
8	FP11N-11	Connector P.C. Board
9	FR345-12	Head Base
10	FR346-11	Assist Base
11	FR347-11	Motor Bracket
12	FR349-13	Dumper Bracket
13	FR350-12	Door Bracket
14	FR352-11	Safety Lever
15	FC11H-12	Eject Lock Arm
16	FR355-14	FF Solenoid Arm
17	FR356-13	Switch Arm

Symbol No.	Part No.	Description
18	FD17T-11	Record Arm
19	FR358-12	Reference Guide
20	FR359-12	Play Solenoid Arm
21	FR360-12	Cassette Guide
22	FK572-12	Azimuth Spring
23	FK551-13	Cassette Spring
24	FH126-11	Band
25	FK568-11	Door Spring
26	FK569-12	Pinch Roller Spring
27	FK570-12	Solenoid Bracket Spring
28	FK572-11	Azimuth Spring
29	FK573-11	Lock Arm Spring
30	FK574-12	Assist Base Spring
31	FK575-11	Play Idler Spring
32	FK576-12	Play Solenoid Arm Spring
33	FK577-12	Head Base Spring
34	FK578-12	Head Base Hold Spring
35	FK579-11	Back Tension Spring
36	FM281-11	Flywheel Spacer
37	FM283-13	Head Spacer
38	FM296-11	Spacer
39	FN153-11	Play Gear
40	FN154-13	Idler Gear
41	FP462-11	Main Belt
42	FP463-11	Sub Belt
43	FP464-11	Pad Cushion
44	FP467-11	Flywheel Assembly
45	FP469-11	Idler Assembly
46	FP470-11	Clutch Assembly
47	FR12N-11	Takeup Reel Assembly
48	FP472-11	Dumper Assembly
49	FR12P-11	Supply Reel Assemby
53	FE173-11	Slide Switch
54	PKA16106	Solenoid
55	FG114-15	Screw with Washer (M2.6 x 4.5)
56	FG137-15	F-Lock Screw (M2 x 13)
57	FG143-26	Pan Screw (M2.6 x 15)
58	UY11C-11	Connector (9P)
59	KG194-12	Tap Tight Screw (M3 x 6)
60	KG194-46	Tap Tight Screw (M3 x 4.5)
61	FJ111-14	Polyethylene Slider (φ2.5 x 0.5)
62	FJ111-19	Polyethylene Slider (φ2 x 0.13)
63	FJ123-14	Lock Washer (φ1.7)
64	FJ123-21	Lock Washer (φ2.6)
65	FJ123-19	Lock Washer (φ3.5)
66	FJ141-12	Oil Seal Washer
67	UG11D-11	Tap Tight Screw (M2 x 12)
68	FK11C-11	Spring
69	F027-054	Cassette Support Assembly

Symbol No.	Part No.	Description
70	F028-025	Brake Assembly
71	FD12W-11	Brake Arm
72	FK11Y-12	Brake Rod
73	FK12A-11	Brake Spring
74	FG143-17	Pan Screw (M2.6 x 3)
76	F184-024	Decoration Plate
77	22701783	Tap Tight Screw (M3 x 6) (Black)
ACCESSORIES		
	22164836	US1P Plug Cord
	22954610	Owner's Manual
	22951862	Warranty Card

Symbol No.	Part No.	Description